



# Improving the Selection and Preparation of Teachers: Evidence from NYC

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# Overview of Talk

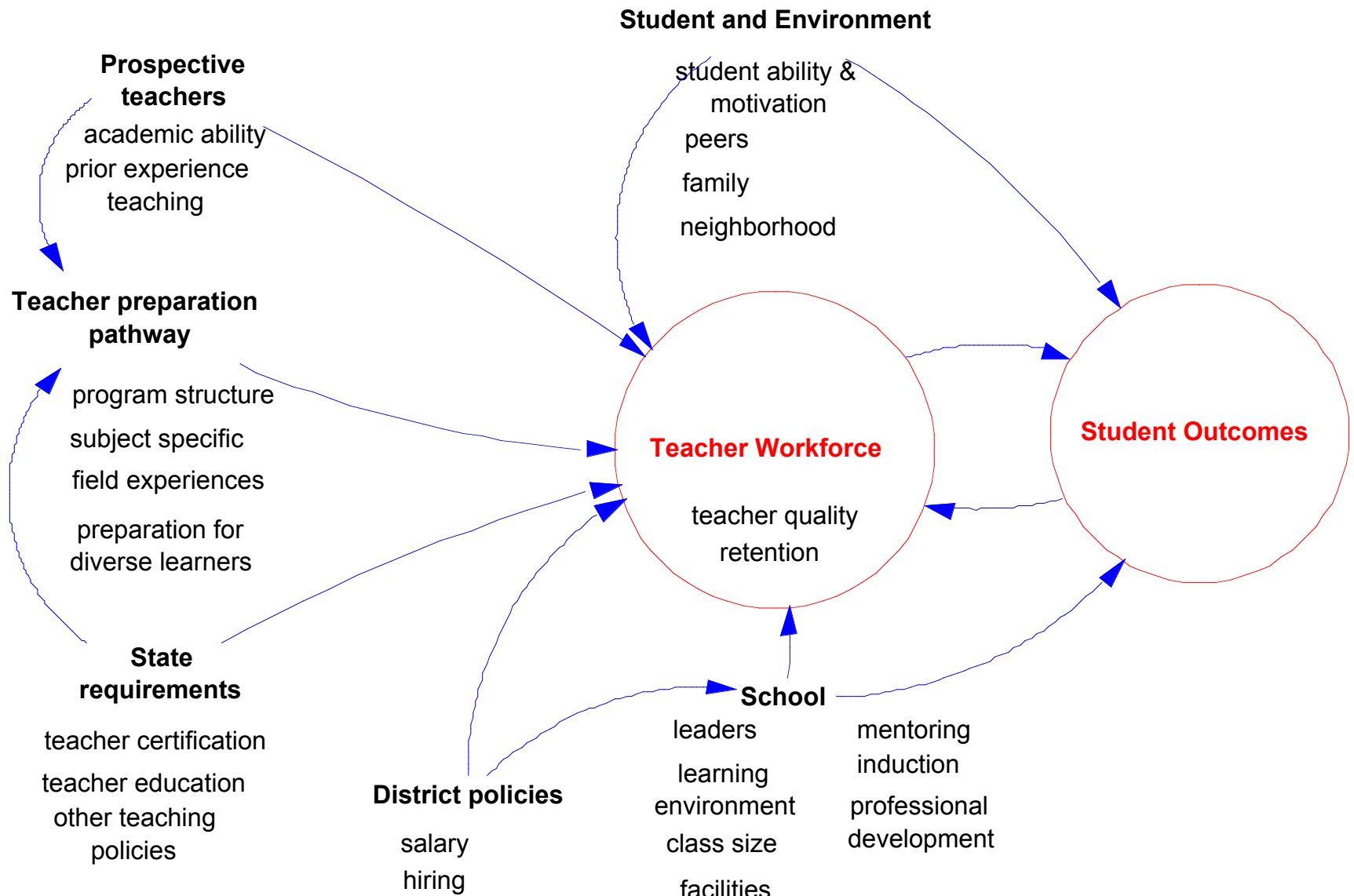
- Description of Pathways into Teacher Study
  - Teacher Selection
  - Teacher Preparation
- Implications of findings for teacher preparation going forward
- Role of NEA



# Origins of Pathways Study

- Project origins
- Focus on student achievement outcomes
- Collaboration among NYCDOE, NYSED, CUNY and independent college preparation institutions
- Role of union

# The Teacher Workforce and Student Outcomes





# Data Collection

## ■ Program analysis

- Document analysis, interviews

## ■ Surveys

- Graduating program participants (2004), new NYC teachers (2005), second year and former teachers (2006)

## ■ Administrative data

- All NYC teachers 1990-2006; rich measures of teacher qualifications, including certification exams and areas, teacher retention.
- Student achievement 2000-2006; value-added scores in math and ELA, grades 4-8 linked to teachers.
- Data on schools and students

# Value Added Methods

## General specification

$$A_{ijst} = \beta_0 + \beta_1 A_{ijs(t-1)} + X_{it} \beta_2 + C_{ijst} \beta_3 + T_{jst} \beta_4 + P_{jst} \beta_5 + \omega_s + \varepsilon_{ijst}$$

## Achievement as a function of:

- ☐ prior achievement,
- ☐ student characteristics
- ☐ classroom characteristics
- ☐ teacher characteristics (in some specifications)
- ☐ program features (or program effects, or teacher experiences, or other variables of interest)
- ☐ random error
- ☐ **school fixed-effects** (in most specifications)



# Teacher selection and preparation

- Teacher selection: How do teacher qualifications influence student achievement?
- Teacher preparation: What aspects of teacher preparation influence student achievement?



# Teacher selection

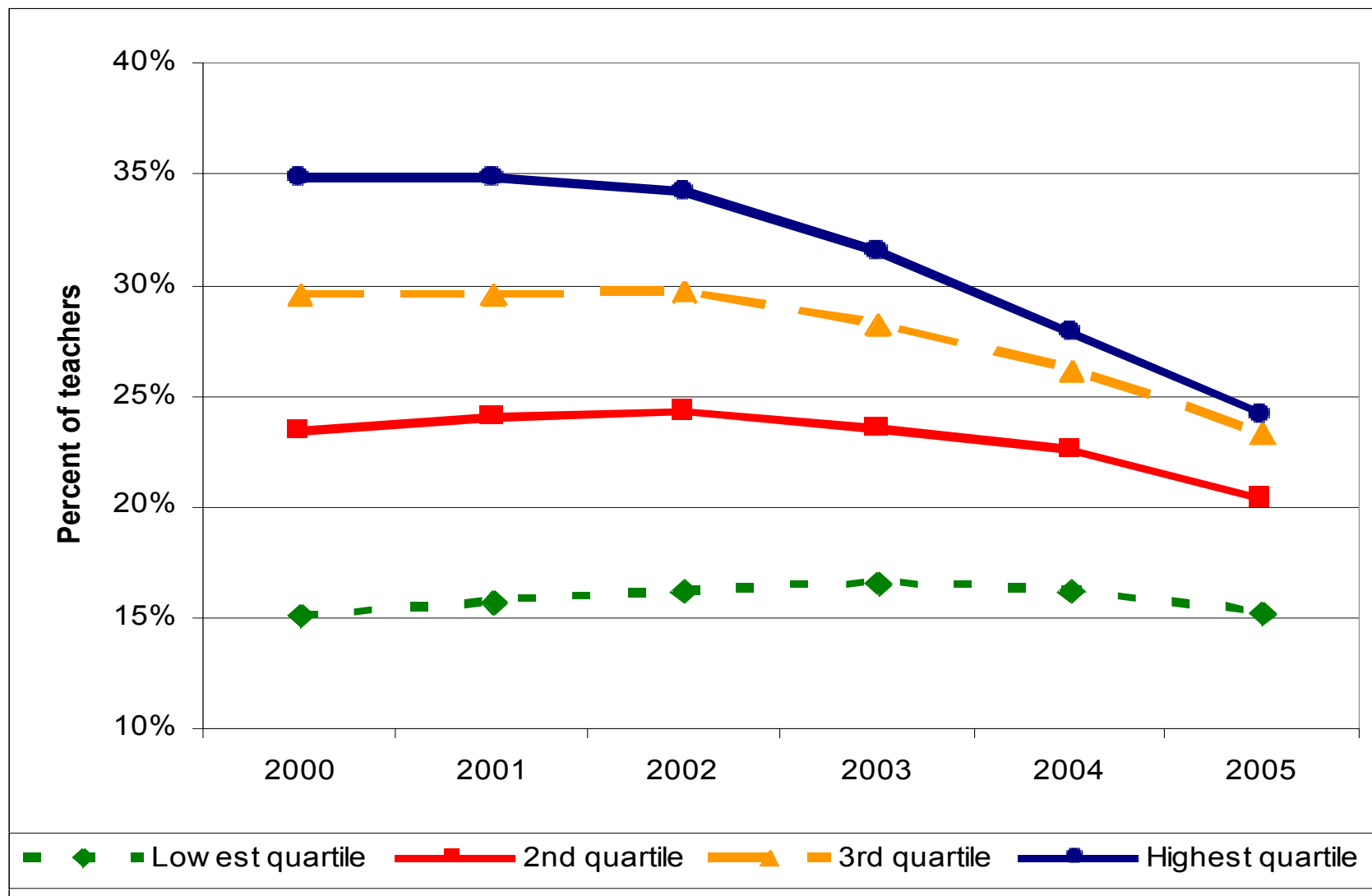
- How do teacher qualifications influence student achievement?
- Historically, sorting of teachers with lower qualifications to schools with disproportionate share of poor students



# Teacher Qualifications NYC Elementary Schools 2000 by School Poverty Decile

Teacher Qualifications	Lowest 10%	Highest 10%	Gap: Highest 10% - Lowest 10%
% with less than 3 years of NYC teaching experience	14.7%	25.4%	10.7%
SAT math score	490	447	-43
SAT verbal score	506	461	-45
% who failed LAST exam on first attempt	12.2%	34.2%	22.0%
% Not certified to teach	4.0%	21.9%	17.9%
% who attended least competitive undergraduate institutions	23.5%	27.4%	3.9%

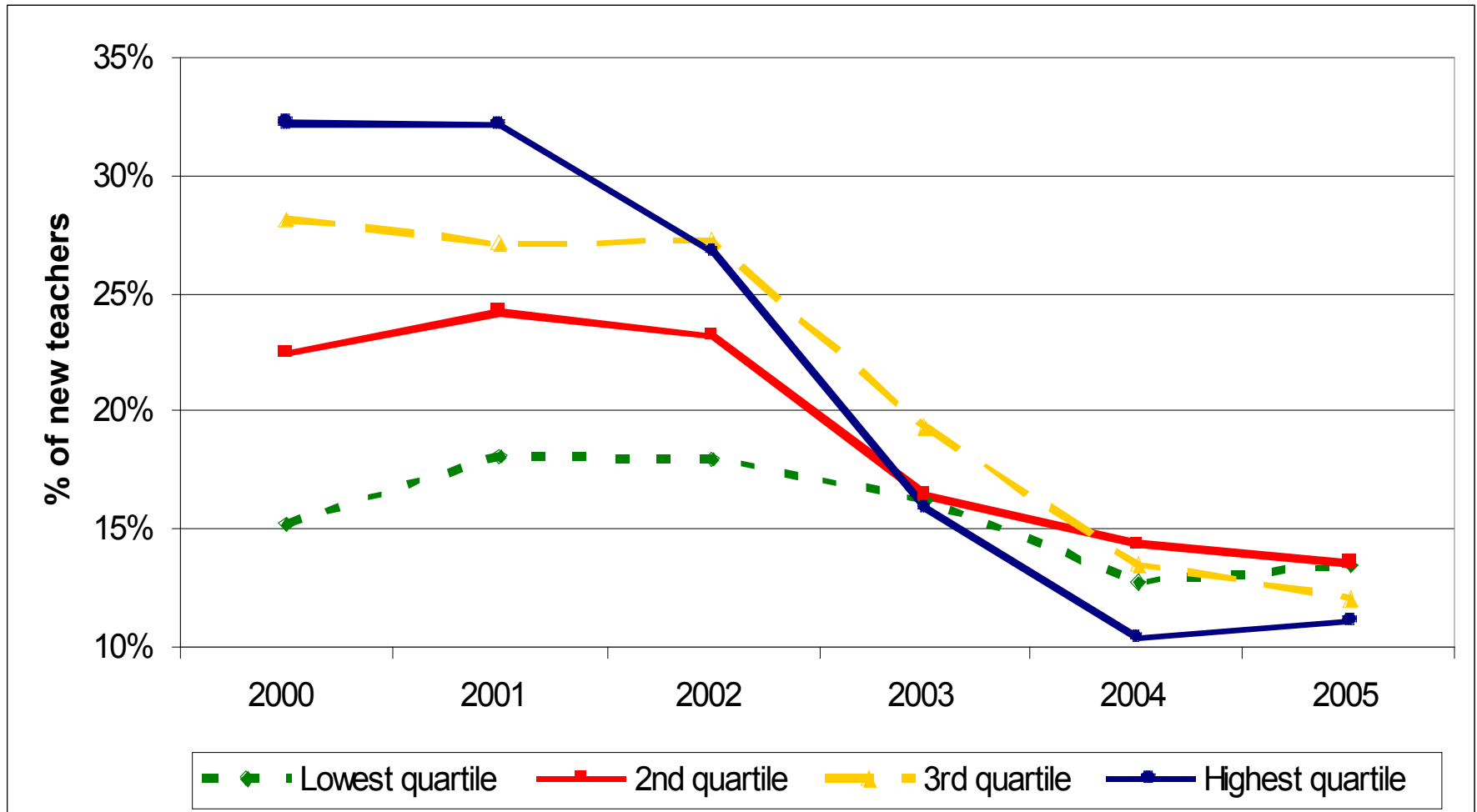
# Liberal Arts & Sciences Test Failure Rate of NYC Elementary Teachers by School Poverty Quartile



# Teacher Qualifications NYC Elementary Schools 2000 & 2005 by School Poverty Decile

Teacher Qualifications	2000			2005		
	Lowest 10%	Highest 10%	Gap	Lowest 10%	Highest 10%	Gap
% with less than 3 years of NYC teaching experience	14.7%	25.4%	10.7%	15.1%	21.7%	6.6%
SAT math score	490	447	-43	495	471	-23
SAT verbal score	506	461	-45	503	485	-18
% who failed LAST exam on first attempt	12.2%	34.2%	22.0%	13.4%	24.7%	11.3%
% Not certified to teach	4.0%	21.9%	17.9%	1.5%	3.3%	1.8%
% who attended least competitive BA institutions	23.5%	27.4%	3.9%	26.7%	24.3%	-2.4%

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





# Policies Contributing to Change

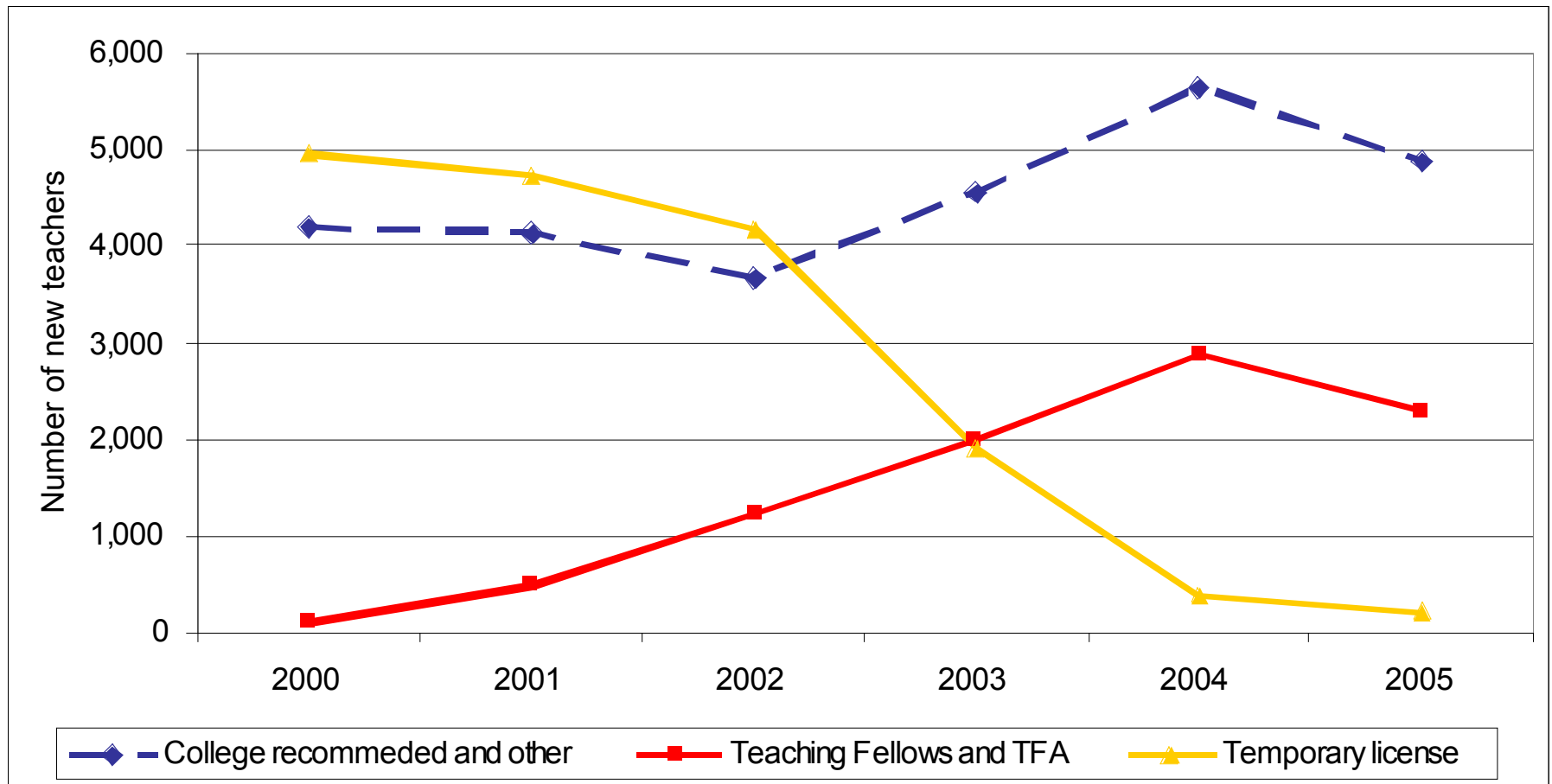
- In 2000 the NYS Regents created alternative certification routes
- In 2000 the NYC Department of Education created its first cohort of NYC Teaching Fellows
- Effective September 2003, NYS Regents eliminated temporary licenses for uncertified teachers with very limited exceptions
- Between 2000 and 2003 starting salaries in NYC increased from \$33,186 to \$39,000



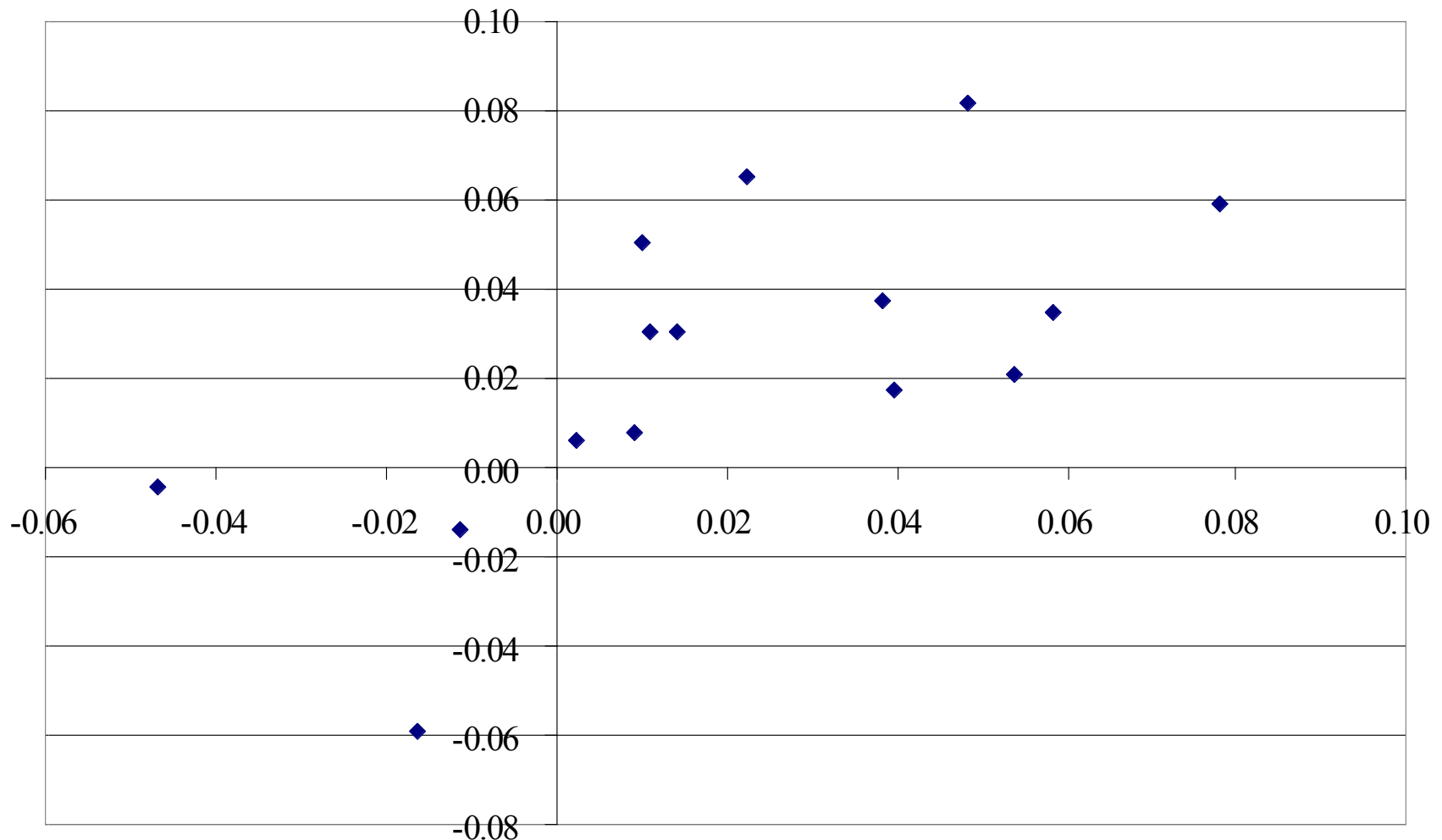
# Teacher Preparation

- How are teachers enter teaching in NYC?
- Do programs make a difference?
- What features of preparation—across programs and pathways-- relate to student achievement?

# Changes in Pathways in to Teaching of New NYC Teachers, 2000-2005




# Institution Effects: Math (x-axis) and ELA (y-axis), first-year teachers 2001-2006 (40+ teachers)



Effects jointly significant in all specifications





# Do features of teacher education programs make a difference?

Two approaches:

- Features of preparation, as documented by program analyses
- Features of preparation, as documented by survey reports of graduates



# Program documentation

- 31 childhood education programs
  - 16 institutions
  - 26 “traditional” college recommending programs
  - 5 alternative programs (TFA and NYC Teaching Fellows)
- Documentation of 5 aspects of TE
  - Program structure
  - Preparation in learning
  - Preparation for teaching ELA & Math
  - Preparation for teaching ethnically and linguistically diverse students
  - Field experience



# Examples of Features of Field Experience Program Documentation

1. Who is primarily responsible for picking the cooperating teachers?
  - program faculty or staff
  - school administrator
  - candidate
2. Does program require minimum experience for cooperating teacher?
3. Number of times supervisor observes candidates?

# First Year Teacher Results

	ELA		Math	
	2001-2006	2005&2006	2001-2006	2005&2006
<b>Capstone</b>	<b>0.050***</b>	<b>0.102*</b>	<b>0.041**</b>	<b>0.122**</b>
<b>Oversight</b>	<b>0.012</b>	<b>0.104**</b>	<b>0.032***</b>	<b>0.124***</b>
(3 items)				
%Tenure faculty	0.018	-0.048	0.118**	0.061
# of required Math courses	-0.003	0.001	0.024***	0.01



# Reported Experiences: Survey Data

- Surveyed all first year teachers in NYC in spring of 2005
- Survey available at [www.teacherpolicyresearch.org](http://www.teacherpolicyresearch.org)
- Practice Variables



# Practice Variables

## ■ **Practice** (How much opportunity did you have to:)

- ☐ “listen to an individual child read aloud for the purpose of assessing his/her reading achievement,”
- ☐ “plan a guided reading lesson”
- ☐ “study or analyze student math work”

## ■ **Review Curriculum** (average of opportunities to:)

- ☐ “review New York City mathematics curriculum”
- ☐ “review New York City reading curriculum”

## ■ **Student Teaching**

- ☐ Whether they did no supervised student teaching prior to teaching

## ■ **Congruence of Field Experiences** (average agreement with:)

- ☐ “My experiences in schools were similar to my current job in terms of grade level.”
- ☐ “My experiences in schools were similar to my current job in terms of subject area.”

# Math Results for First Year

	Together Fixed effects	Separately Fixed Effects
Practice	0.061***	0.062***
Curriculum	0.026**	0.028**
No Std.Teach	-0.088**	-0.109***
Congruence	0.069***	0.065***
ELL	0.032**	0.023
Misbehavior	0.017	0.027*

# ELA – Somewhat Similar Results but only for College Recommended

	Whole Sample	College Rec
Practice	0.038*	0.035**
Curriculum	0.037	0.054***
No Std. Teach	-.111	-0.045
Congruence	-0.018	-0.020
ELL	0.023	0.057
Misbehavior	-0.020	0.002





# Conclusions

- Some indication of important variation in field experiences, assignments and content
- Indication that some features of preparation are linked to teachers' subsequent impact on student achievement
- Indication that a few programs produce teachers who are much more effective in first year of teaching



# Policy Implications


- How do we produce more first year teachers who can have greater impact on student achievement?
  - Example of program that produced teachers who had impact similar to 2<sup>nd</sup> year teachers in their 1<sup>st</sup> year
- How do we ensure that teachers are well prepared to enact practices that support student learning?



# Next Steps

## ■ Teachers matter

- How to leverage finding that ‘teachers are the most important variable affecting student achievement’
- How to focus on how to prepare stronger teachers, not just on firing weaker ones



# Future Research: Identification of Core Practices & Practice-based Teacher Education

- Study of classroom practices in ELA that are related to student achievement
  - PLATO
- Identification of ‘core practices’ or “high-leverage practices”
  - Explicit strategy instruction
- Focus teacher education and professional development around these practices