

US K-12 Fact Base:
Excerpts from the
McKinsey Report to the
Gates Foundation

Sources listed on each of 27 slides

US education system main findings

Essential facts

Teachers

- Teacher effectiveness is the strongest contributor to student performance; over a 3 year period, students taught by top-20% teachers achieve ~50 percentile points higher than students taught by bottom-20% teachers
- The employee value proposition for retaining and attracting talented teachers is weak, consisting of low pay, minimal recognition and limited opportunities for professional growth
- Ineffective teachers are not removed – 98% of all eligible teachers are tenured, and virtually none are dismissed for poor performance
- Effective teachers leave the system at a disproportionate rate
- Current approaches to professional development do not seem to improve teacher effectiveness

Teacher preparation

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- Schools of education prepare 80% of teachers, and draw mainly from bottom 1/3 of college graduates
 - Yet, 62% of first year teachers report being unprepared, and on average *worsen* student outcomes by 4 percentile points
 - The future effectiveness of new teachers has not been reliably predicted in the U.S. by characteristics, sources, or certification
 - Global experience suggests that improving the quality of teacher sourcing and training matters profoundly to outcomes

US education system main findings (CONTINUED)

Essential facts

School leadership

- Highly effective instructional leaders in high-need schools improve teacher effectiveness and student achievement
- Effective principals attract and retain better teachers
- Most principals' time, mindshare, and skill sets are disproportionately focused on administrative responsibilities – and they lack the autonomy to truly lead
- Value proposition (including pay, conditions, and a lack of autonomy) for principals in high-need schools is weak
- School leadership has a 0.25 correlation with student achievement, which typically means to a 10+ percentile point difference in student achievement between an average leader and a top quartile leader

District management

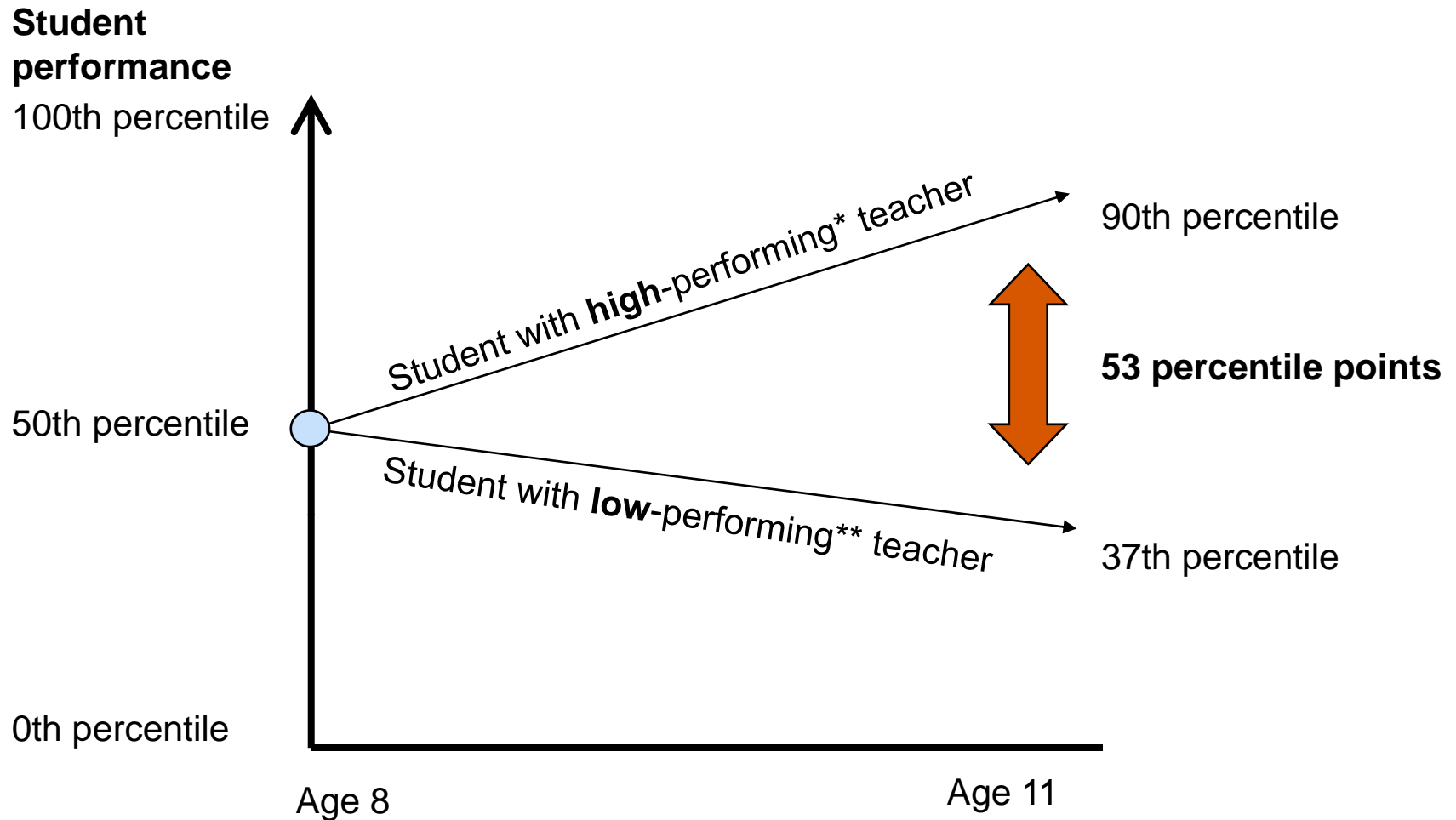
- District central offices often lack coherent strategy/vision for human capital reform, while high turnover of district leaders decreases capacity for sustainable reforms
- Responsive central office functions are critical enablers of school leaders' (and teachers') ability to focus on instruction
- District central office functions have primary responsibility for recruitment and placement of teachers

Enabling environment

- State-level regulatory barriers obstruct or inhibit teacher training reform
- Teachers unions resist several essential human capital reforms
- Spending on less productive priorities (e.g., class-size reduction) absorbs resources which could be used to attract and retain better teachers and principals
- Lack of operational data systems and aligned instructional systems limit continuous improvement
- Many collective bargaining agreements create barriers to the human capital reform required to improve student outcomes

Primary education system facts – teachers

Performance management is critical, since the effect of teaching quality is multiplicative



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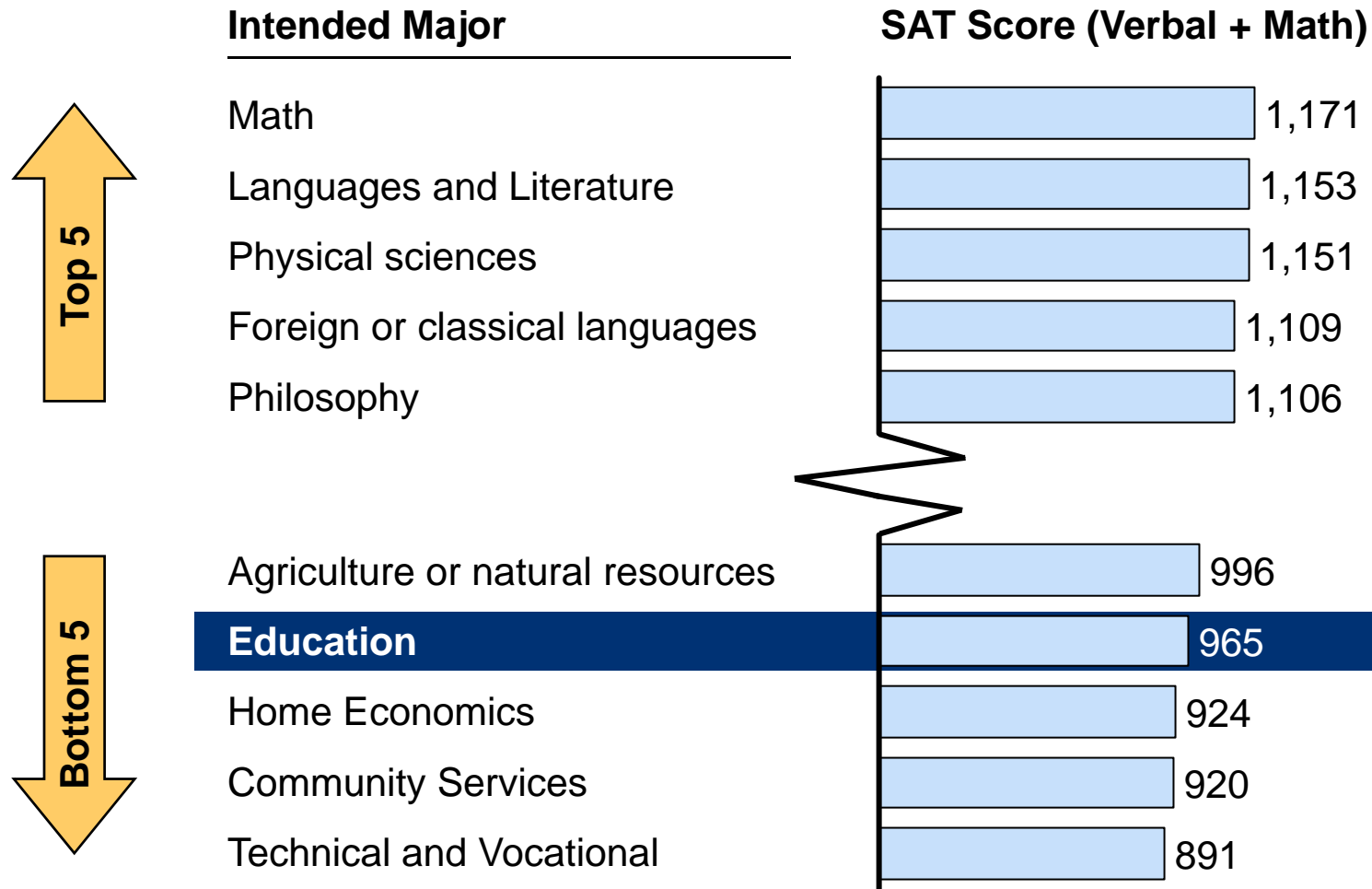
* Among the top 20% of teachers

** Among the bottom 20% of teachers

Teachers – identifying talent

Education majors tend to have the lowest SAT scores

SAT scores and intended majors in the United States



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Meta-analysis shows certain attributes are tied to teacher effectiveness

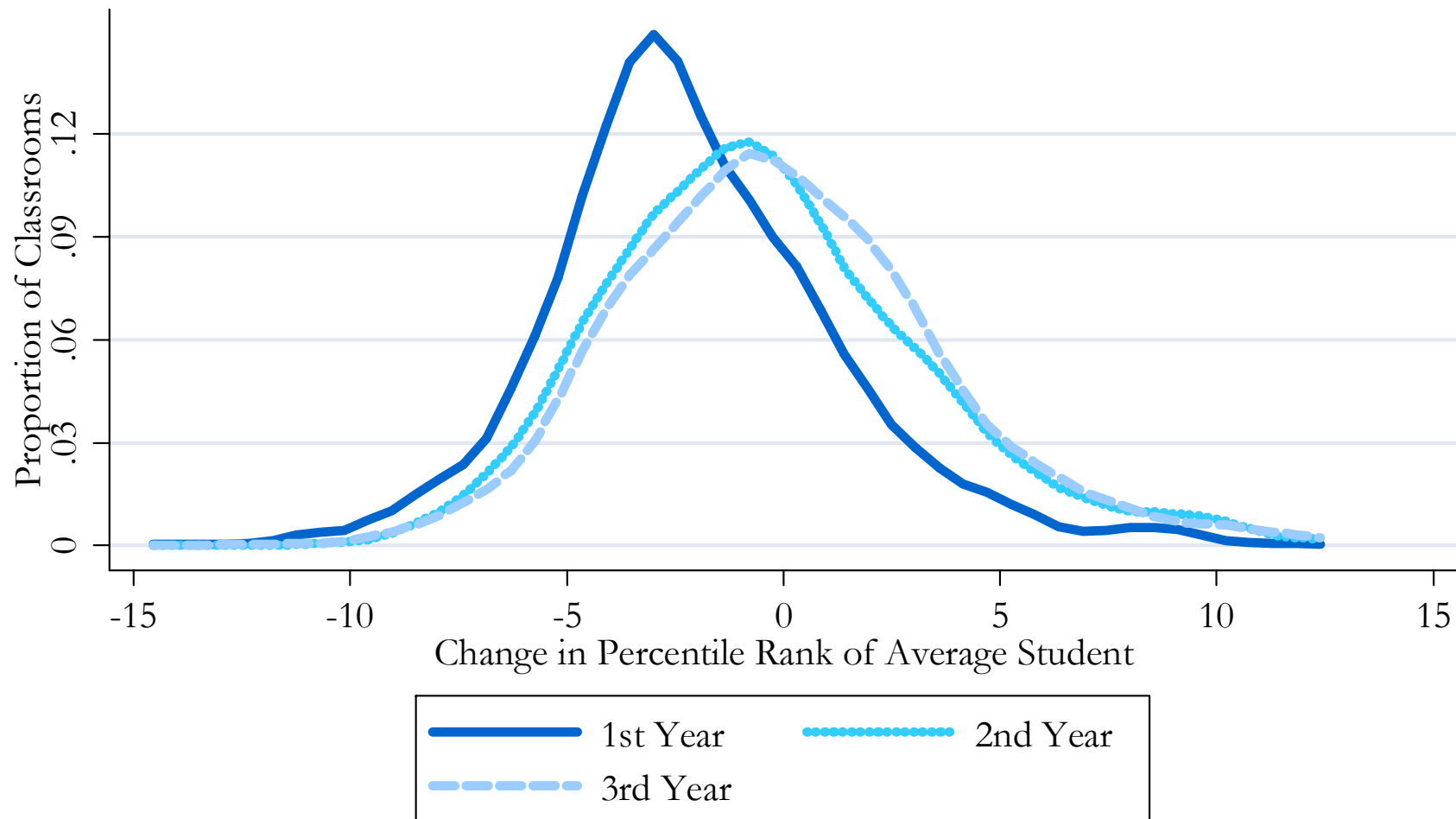
High-level findings of National Council for Teacher Quality		Tied to effectiveness
Subject area knowledge	Strong preparation in a secondary teacher’s intended subject area matters. Less known about relevancy for teaching elementary grades	Yes
Teachers’ level of literacy	Literacy level, as measured by vocabulary and other standardized tests is the #1 indicator of a teacher’s effectiveness in the classroom	Yes
Selectivity of college	Teachers with strong academics credentials are more likely to produce greater student learning gains (But may have higher turnover rates)	Yes
Master’s degrees	Evidence is conclusive that master’s degrees do not make teachers more effective (Can have negative tie)	No
Experience	After the initial learning curve [of 3-5 years], little evidence teachers become more effective over time. (May be distorted if effective teachers leave at higher rates)	No
Education courses	Education courses taken before teaching have little impact on teacher effectiveness	No
Traditional certification	Studies have shown no impact or slightly higher impact for nontraditional teachers (e.g., TFA study)	No

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Teachers – identifying talent

Teachers' effectiveness in the second year of teaching closely predicts their future success

Teacher impacts on math performance by year of experience

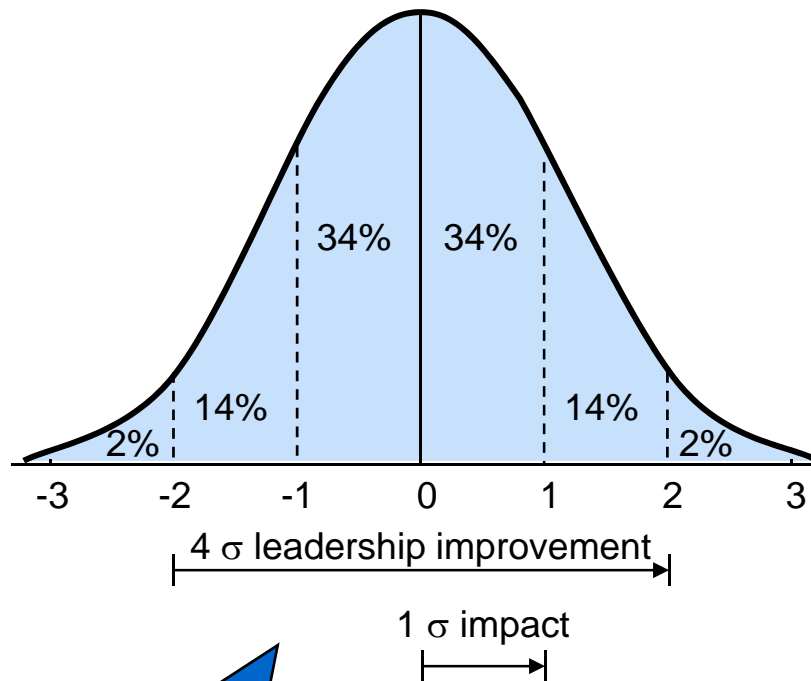


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Note: Classroom-level impacts on average student performance, controlling for baseline scores, student demographics and program participation. LAUSD teachers, <4 years experience
Source: Thomas J. Kane, "Identifying Effective Teachers Based on Performance on the Job" (2006)

Leadership ability has been shown to improve student achievement

Meta-analysis reveals a correlation between leadership and student achievement of 0.25



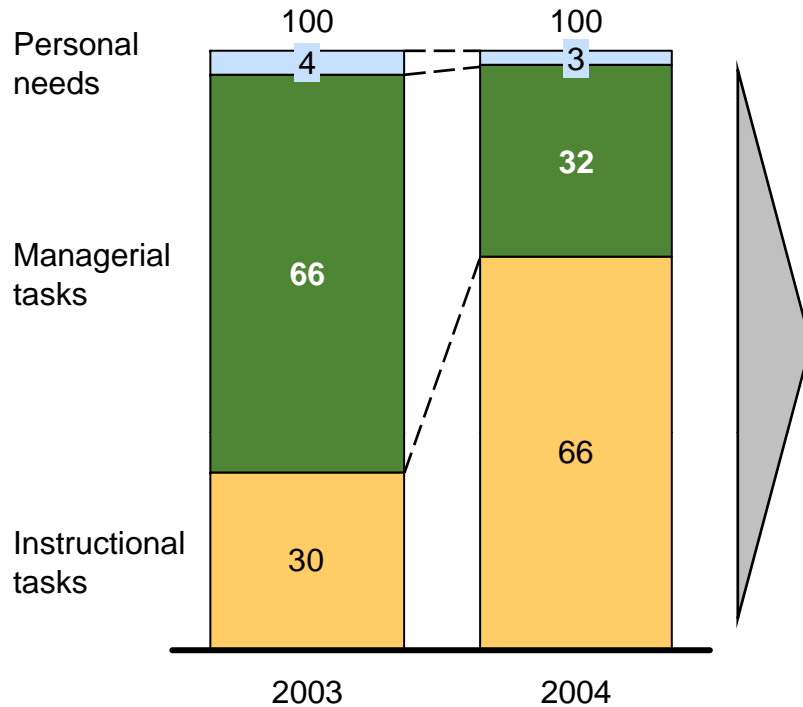
A movement of 1 standard deviation in leadership quality improves student achievement by 0.25 standard deviations

- Replacing an average principal (50th percentile) with an above average one (84th percentile) would be expected to improve student achievement by 10 percentile points
- Replacing one of the worst principals with one of the best, could improve student outcomes by ~34 percentile points

Enabling principals to focus on instructional leadership can rapidly improve student achievement

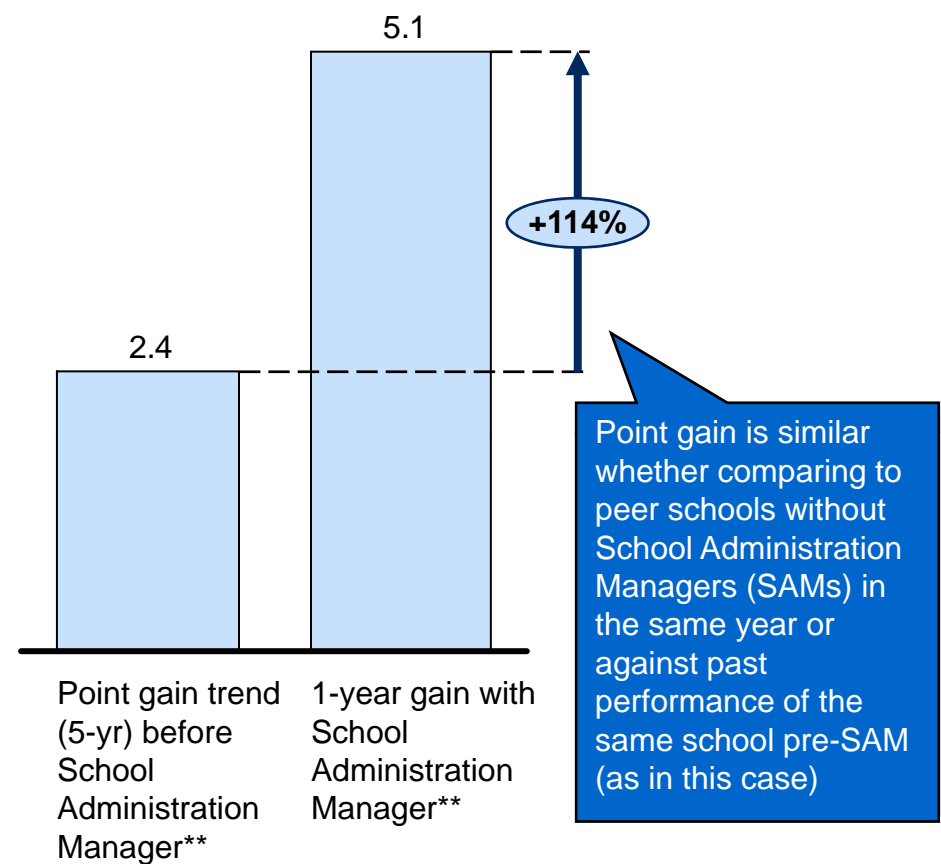
Doubling focus on instructional tasks . . .

Principal time allocation (Percent)



. . . can double improvement in outcomes

Change in school performance*



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* Impact measured on Kentucky Commonwealth Accountability Testing System (CATS) scale of 140 with 100 defined as proficient

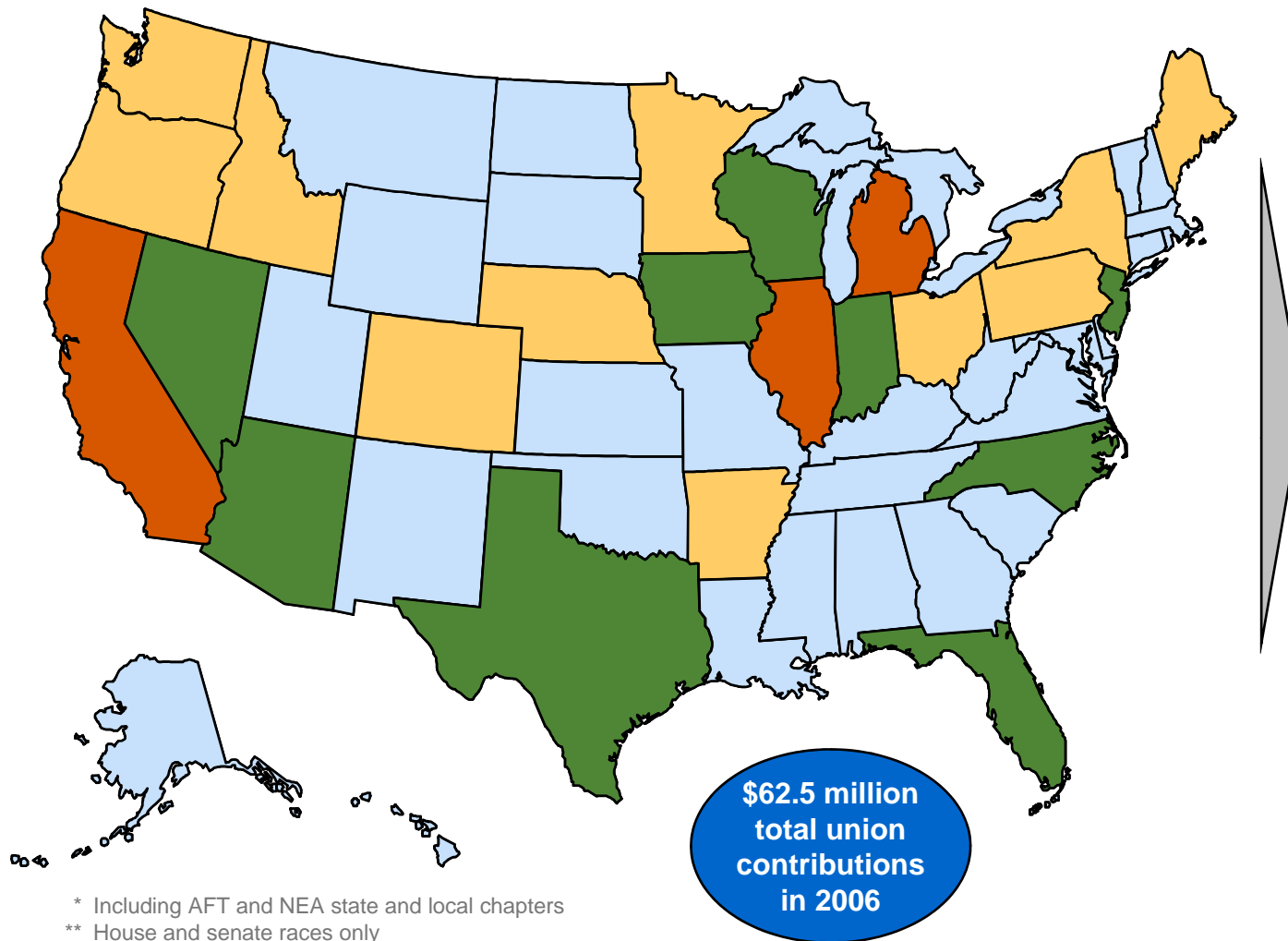
** School Administration Manager with responsibility for budget, student behavior, student supervision, scheduling, cleaning, maintenance, food service, transportation, before and after hours use of the school, supervision of non-instructional staff, and tracking principal use of time

Primary education system facts – enabling environment

State level teacher union contributions to campaigns are even more influential

Teacher union* contributions to 2006 political campaigns**
\$ Millions

- Less than 0.4M
- From 0.4M to 1M
- From 1M to 4M
- More than 4M



- States with highest union contributions**
- California 18.5M
 - Michigan 5.9M
 - Illinois 4.9M
 - Minnesota 3.6M
 - Alabama 3.2M

- States with lowest union contributions**
- Arkansas 33K
 - Wyoming 14K
 - New Hampshire 9K
 - Mississippi 3K
 - Vermont 0K

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* Including AFT and NEA state and local chapters
** House and senate races only

Primary education system facts – enabling environment

Reforms at the “frontier” are promising but not yet at sufficient scale relative to need for change

	Description of reform	
Implementing pay-for-performance	<p>Denver (DPS)</p> <ul style="list-style-type: none"> • ProComp salary schedule reform based on performance pay • Initiated by a pilot study ran jointly by the district and teachers union followed by a joint task force developing the changes comprised of district, union, community members • Tax increase of \$ 25M voted by Denver residents in 2005 • All teachers earn on average \$5,000 more per year • Close to half of all teachers opt in by the end of year 1 <hr/> <p>Minneapolis (MPS)</p> <ul style="list-style-type: none"> • ProPay system stresses performance pay and new teaching standards • Pay increase based on student outcomes and traditional evaluation via observation • Maximum of \$2,000 increase per year • A \$86M grant approved by the state in 2005 <hr/> <p>New York City (NYCPS)</p> <ul style="list-style-type: none"> • Bonus program based on student performance awarded to high-need schools • 15% of the highest-need schools in the district will be eligible in 2007 	
	Removing seniority rules	<p>Boston (BPS)</p> <ul style="list-style-type: none"> • Decreased seniority “bumping” priority is coupled with higher salaries for senior teachers • Initial union opposition is surpassed after the publication of a research issue paper written by an education foundation generating acute community awareness <hr/> <p>Pinellas County (PCPS)</p> <ul style="list-style-type: none"> • Teacher placement gives priority to the “best qualified” applicant regardless of seniority • Reform in implemented in stages by a formal union-district partnership
	Linking strong professional development with career path opportunities	<p>Rochester, NY</p> <ul style="list-style-type: none"> • The Career in Teaching (CIT) program combines peer review and strong mentorship with a four-step career path of intern, resident, professional teacher, and lead teacher • Teacher retention moved from 65% to 90% since implementation <hr/> <p>Montgomery County</p> <ul style="list-style-type: none"> • The Public Growth System (PGS) is developed around peer assistance and review (PAR) which supports an extensive professional development plan • Teachers can choose to pursue several mentoring or curriculum development roles • Evaluation is based on NBPTS and has improved the dismissal of poor performers <hr/> <p>Minneapolis (MPS)</p> <ul style="list-style-type: none"> • TAP is introduced in 2004 including a value-added evaluation model, strong mentoring support, and opportunities for becoming a Mentor teacher or a Master teacher

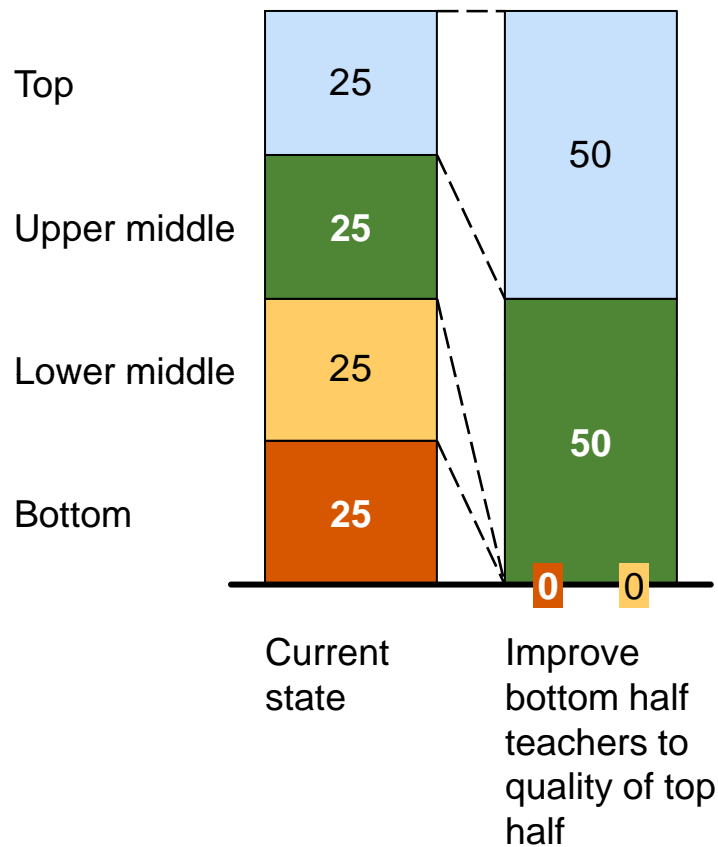
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Teachers – identifying talent

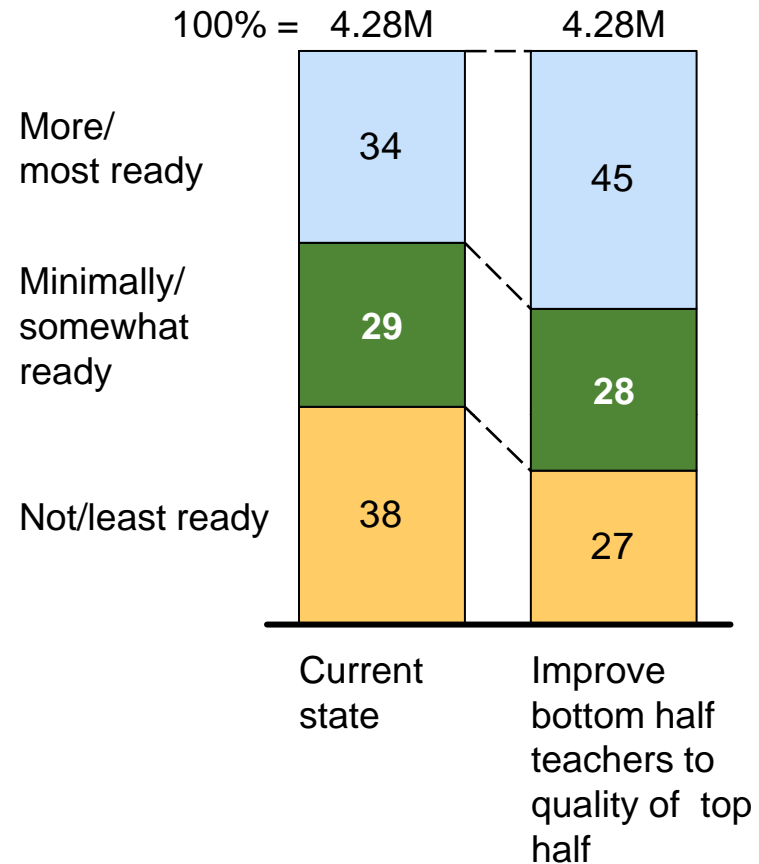
Improving the quality of the bottom half of teachers to match the top half would improve college readiness by ~16%

Percent

Distribution of teaching talent, by quartile of teacher effectiveness



College readiness of high school graduates



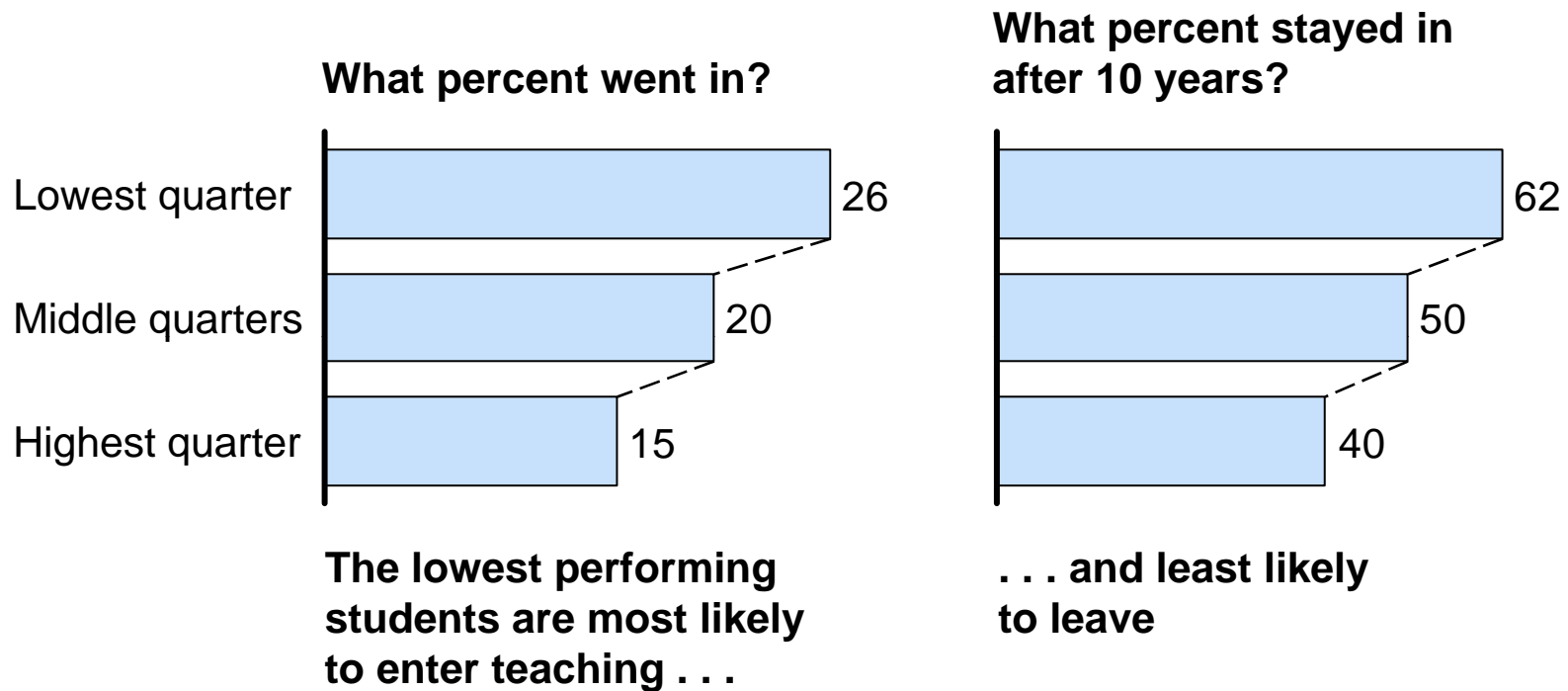
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Teachers – employee value proposition

The current EVP attracts and retains the lowest performing college graduates

Percent

Status of 1992-93 bachelor's degree recipients who were current or former teachers, by college entrance examination in 2003

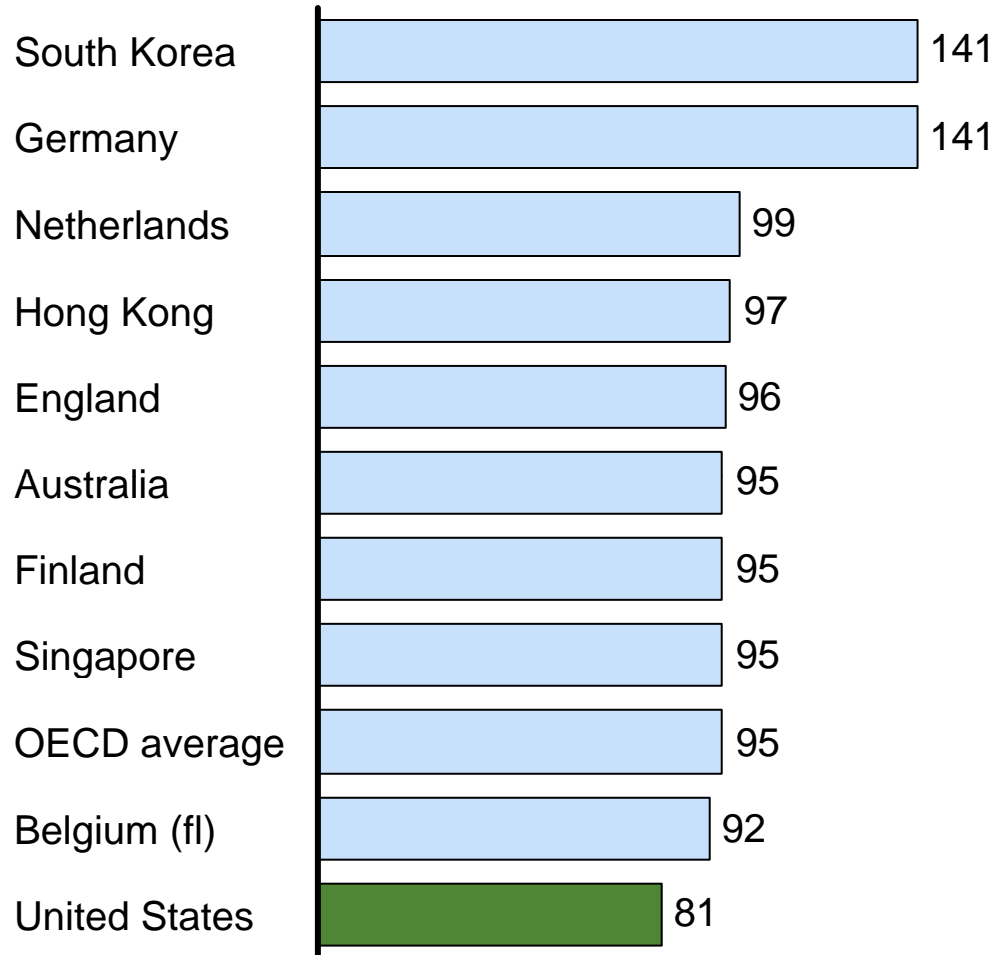


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Teachers – employee value proposition

Starting salaries in countries that attract top talent into teaching tend to be 95-99% of GDP per capita – US is at 81%

School system Starting salary as a % of GDP per capita

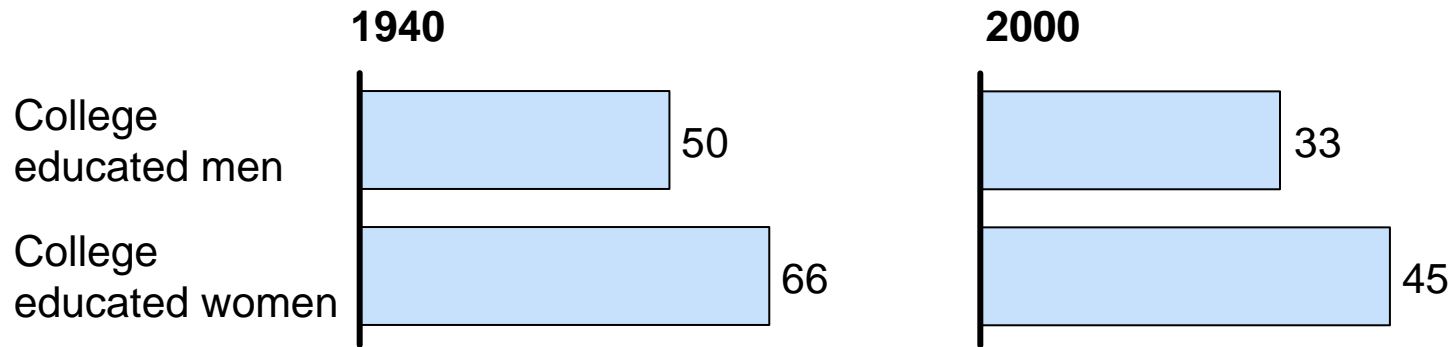


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Teachers – employee value proposition

Most college graduates now earn more than teachers

Percent earning less than the average teacher



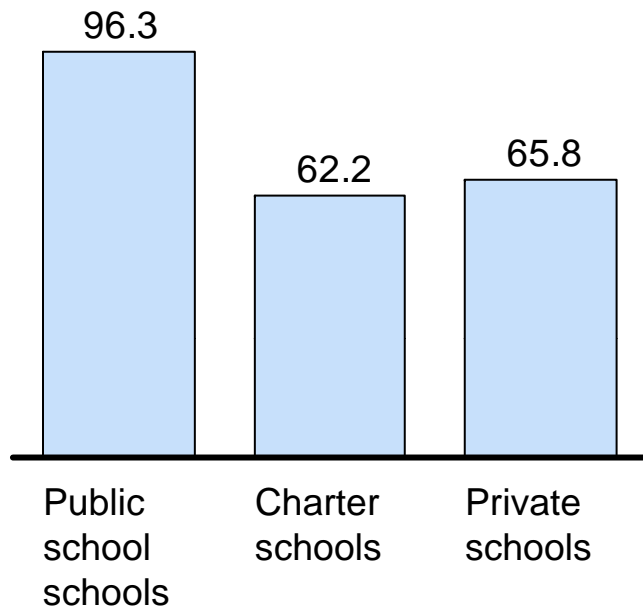
Since 1979, teachers wages have fallen 13% compared to other workers with similar education and experience

Teachers – employee value proposition

Attraction of top candidates may be hindered by the inflexibility in teacher compensation and lack of pay differentials based on performance or proven aptitude

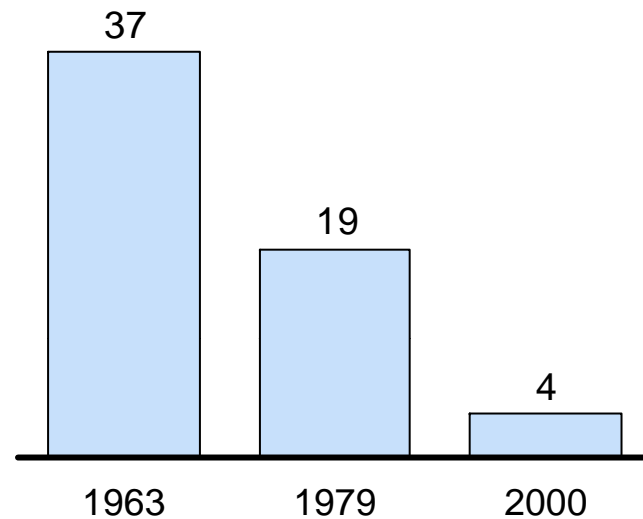
Percent

Mandatory use of salary schedule to determine teacher pay, 2004-05



The majority of public schools use the same base salary schedule and rarely link a significant amount of teacher pay to the quality of teacher performance

Pay differential between teachers of highest and lowest college aptitude* in Ohio and Pennsylvania



Recruiting and retaining top graduates is made harder by the fact that they cannot expect to be paid more than graduates of lower college aptitude

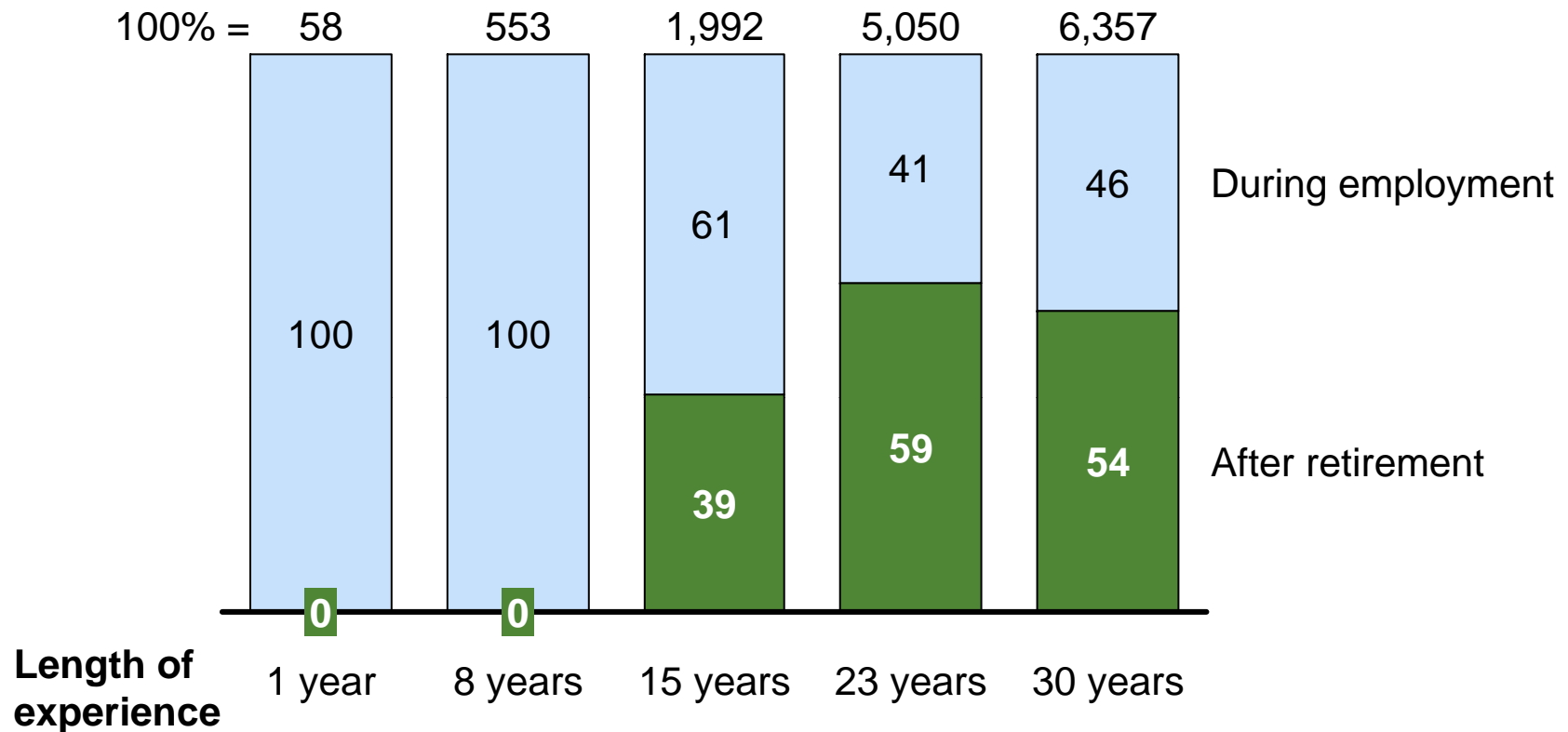
* Based on SAT and ACT scores

Source: The Teaching Commission, "Teaching at Risk: Progress & Potholes" (2006)

Teachers – employee value proposition

Pensions represent large proportion of total cost for tenured teachers

Breakdown of total cost of teachers by length of teaching tenure
 Percent; \$ Thousands (2005 dollars)



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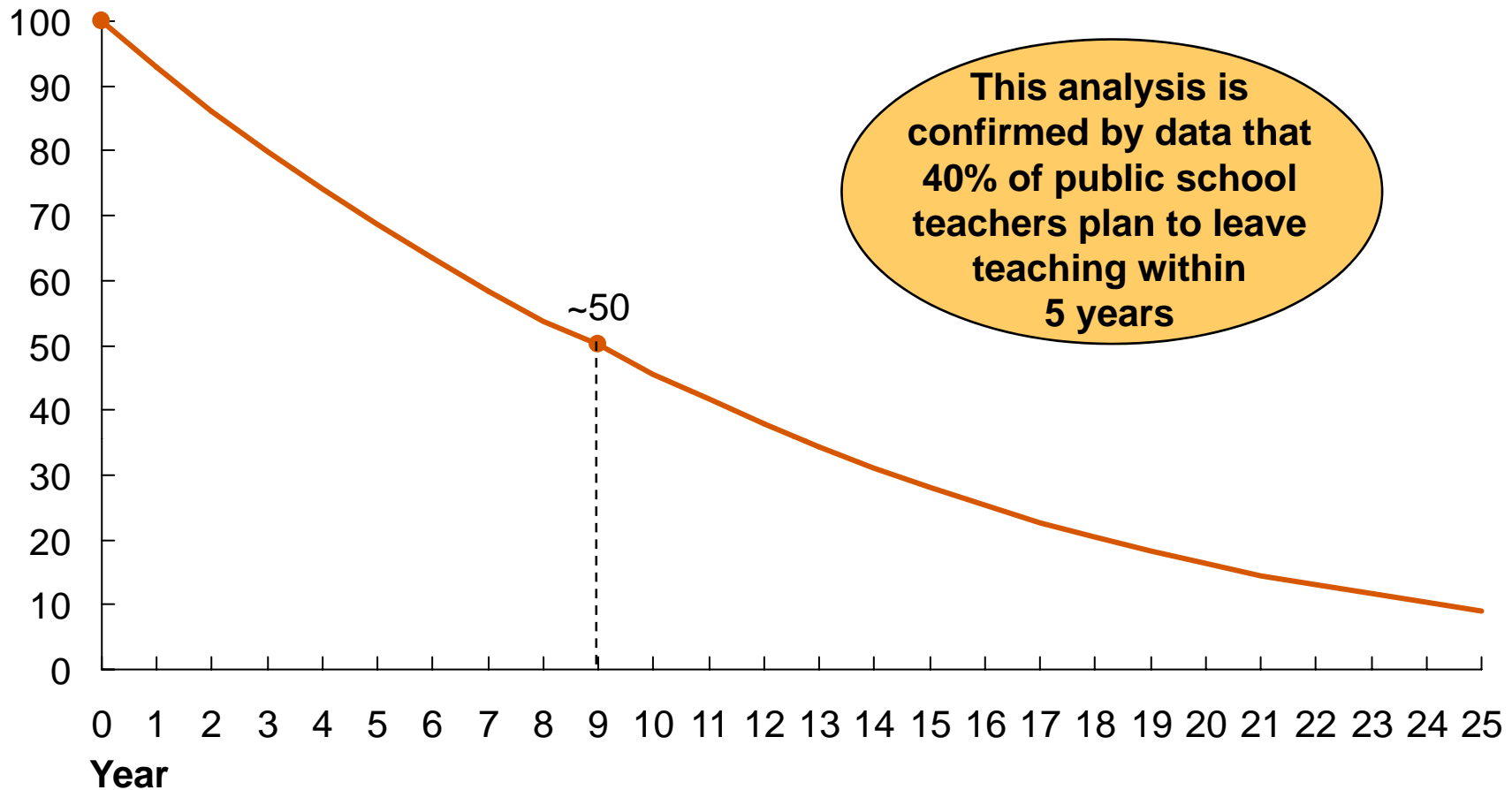
* Represents a female teacher (life expectancy of 81 years) with a Master's degree

Source: Detroit Public Schools 2003-2005 Collective Bargaining Agreement; National Center on Teacher Quality; MSPERS; CIA World Factbook; Ellen Meara et. al., "Trends in Medical Spending by Age" (2004); McKinsey analysis

Teachers – sources

Given the aging of the workforce, over half of current teachers will exit the profession in less than 9 years

Percent of current teachers remaining in the teaching force



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Note: Teacher behavior was modeled using recent teacher age distributions and departure behavior by experience level
Source: The Brookings Institution; National Center for Education Information; McKinsey analysis

England dramatically increased the quantity of new applicants through a national recruiting strategy

England’s Training and Development Agency recruiting strategy

- Emphasizes message of immediate student impact
- Tailored to key drivers of attracting students
- Provides relevant marketing materials to individual districts
- Inspires candidates through TV ads, display advertising, Internet ads, press releases
- Provides ongoing support and advice to candidates as they interview with individual schools
- Recruiting campaign, website, hotline cost ~\$30M yearly

Recruitment strategies moved teaching from the 92nd “most desirable next job” for 25-35 year olds up to 1st place in 4 years

Applications to become a teacher increased by 35% over 3 years

Mid-career applicants tripled over a 4-year period, and now represent 14% of all applicants

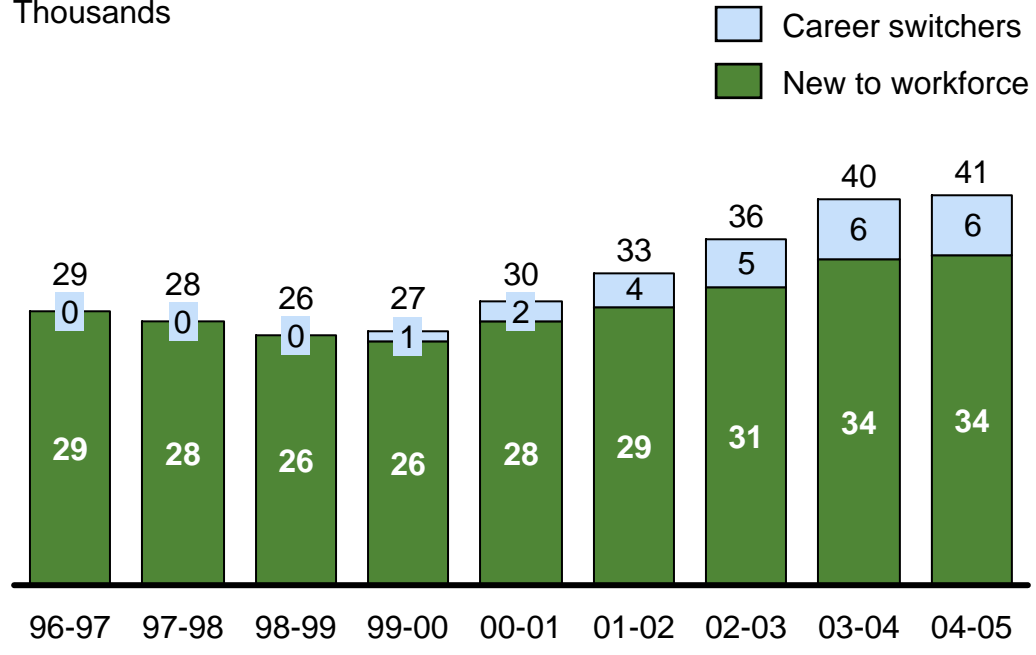
2005-06 incoming teaching corps had highest academic qualifications in England’s history

2005-06 incoming teaching corps showed growth in minority (11%) and male (14%) teachers

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Teachers recruited, by teacher type and school year

Thousands

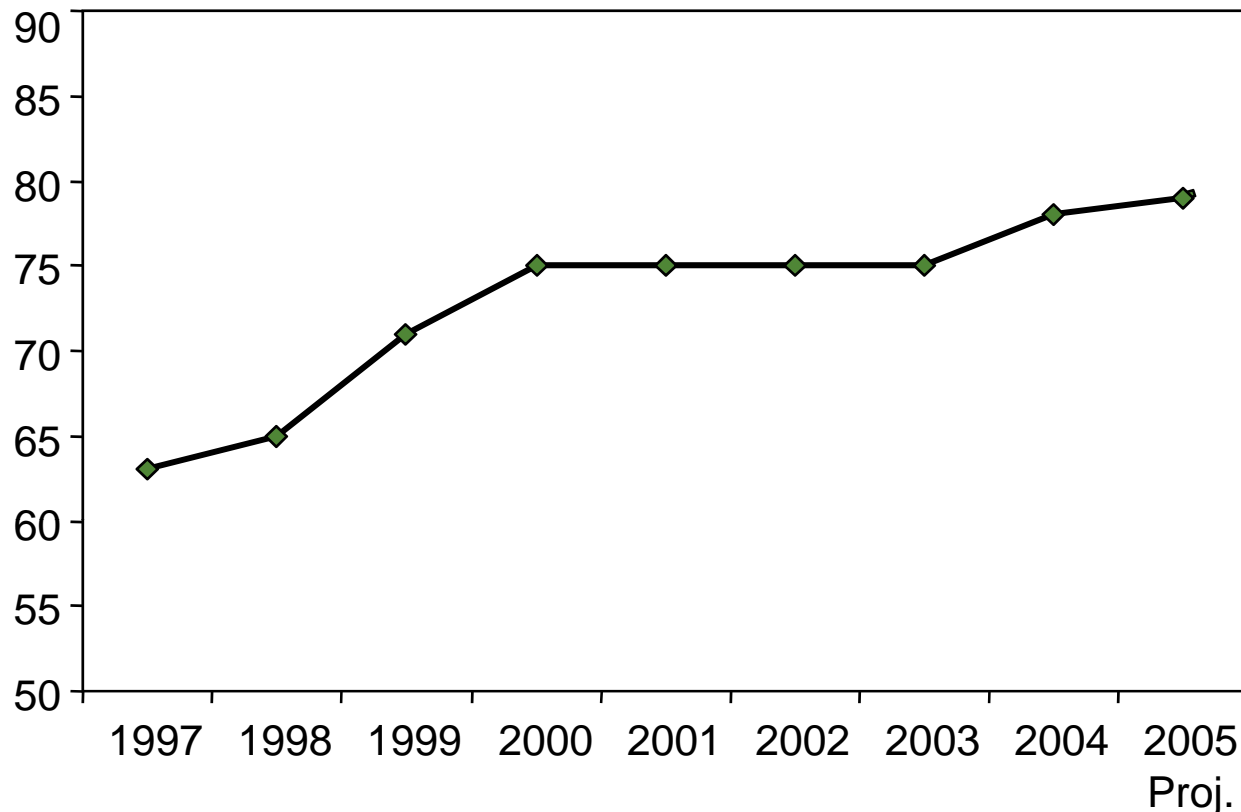


Teachers – training and development

Impact assessment

UK experience suggests that a training initiative can have high impact on student achievement

Percent of pupils achieving level 4+



Key reforms

- *Set national curricular strategy.* Established specific standards and teaching plans for numeracy and literacy
- *Launched mass national teacher retraining:* Trained corps of coaches to train the principal and 1 teacher in every school
- *Retrained again:* Sent coaches back to schools not making performance gains for additional training

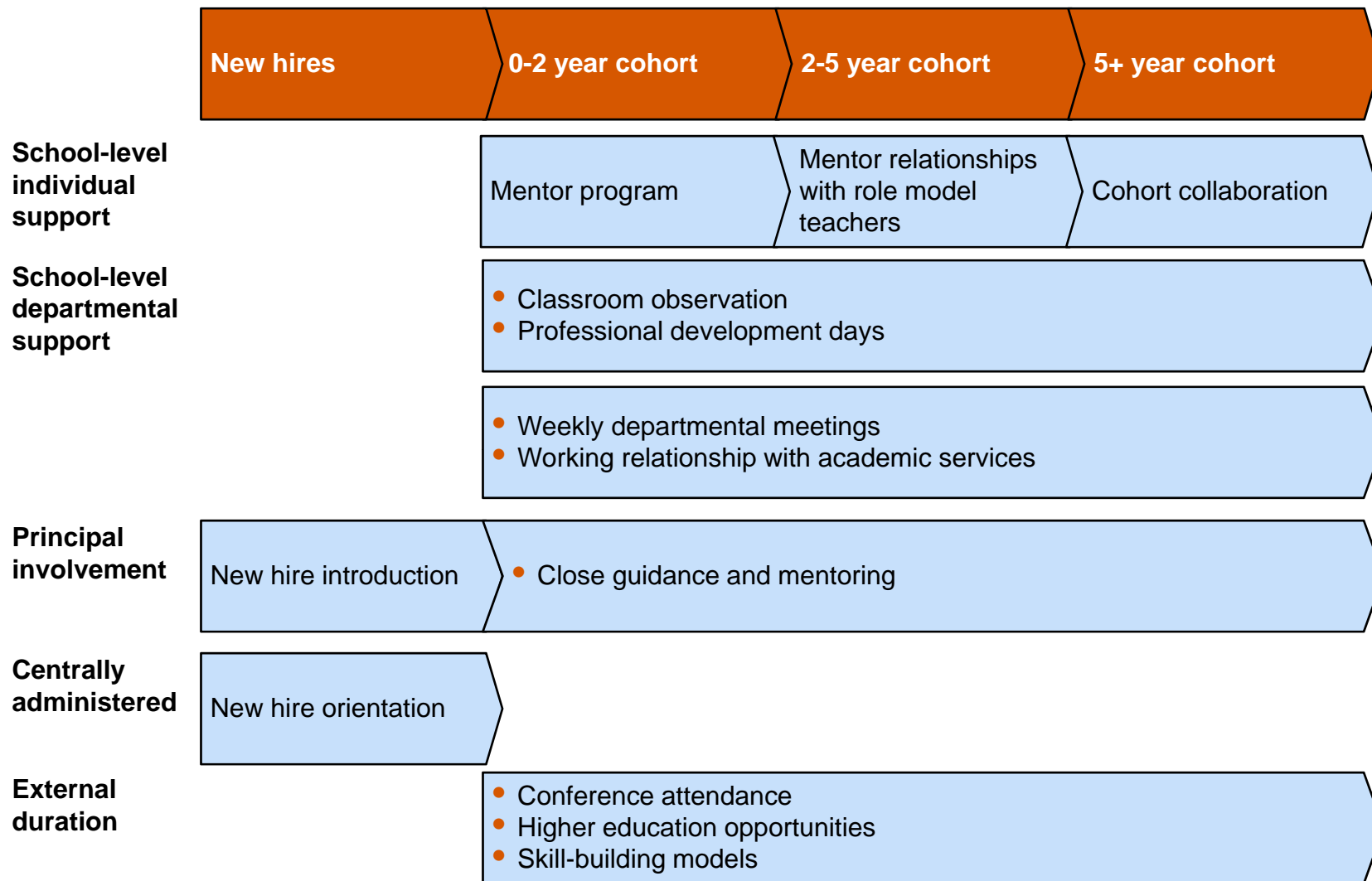
Key Challenges to implementation

- Scale was critical to UK success: launch was massive and nationwide
- No national partner to implement in-school coaching process
- Long-term coaching initiative is necessary for real results: *retraining* was an important part of the UK initiative

Teachers – training and development

Once deployed, teacher development should address individual needs at each tenure level

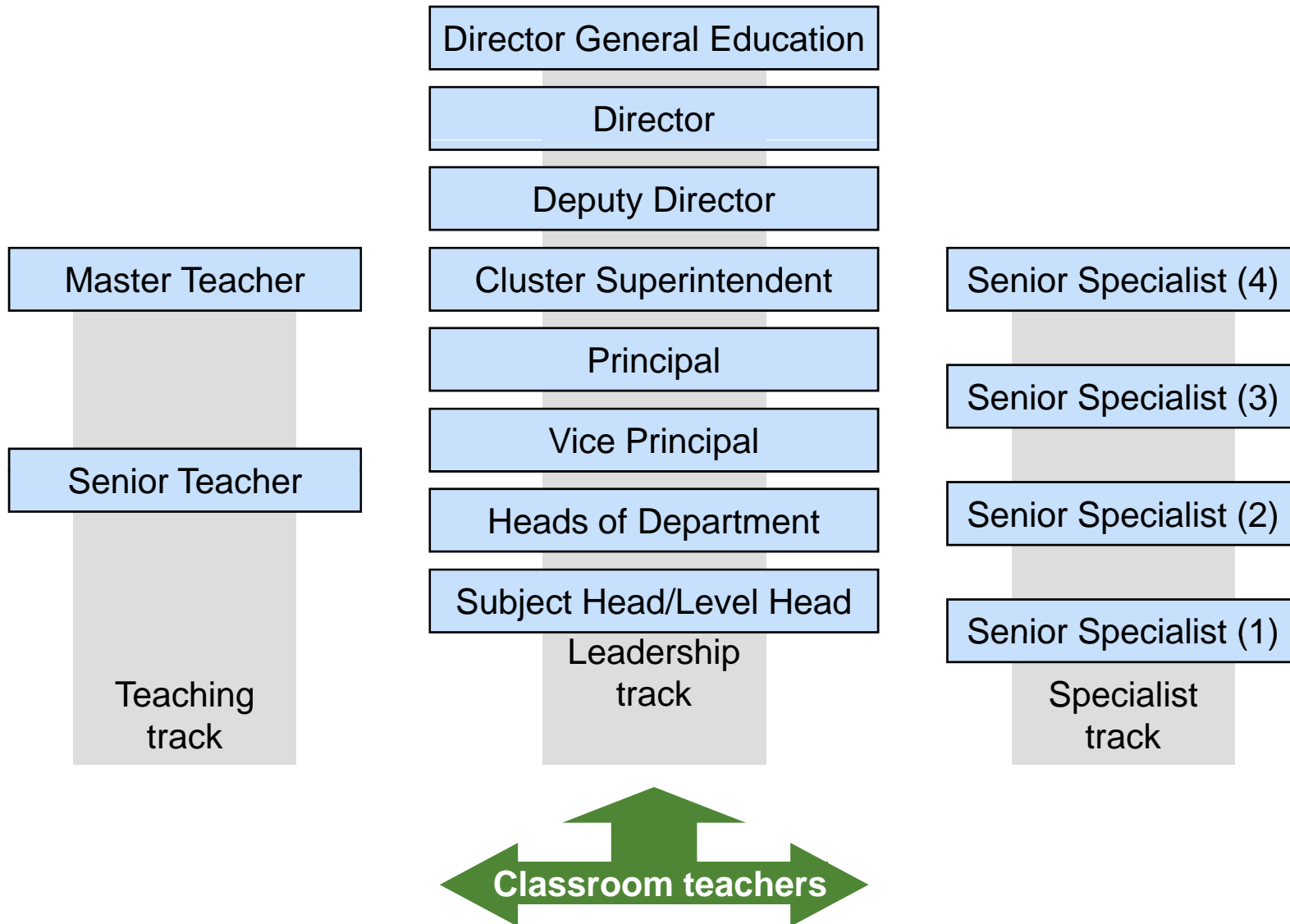
Professional development program (Ohio)



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Teachers – training and development

Singapore found that non-leadership career tracks are important for retaining good senior teachers



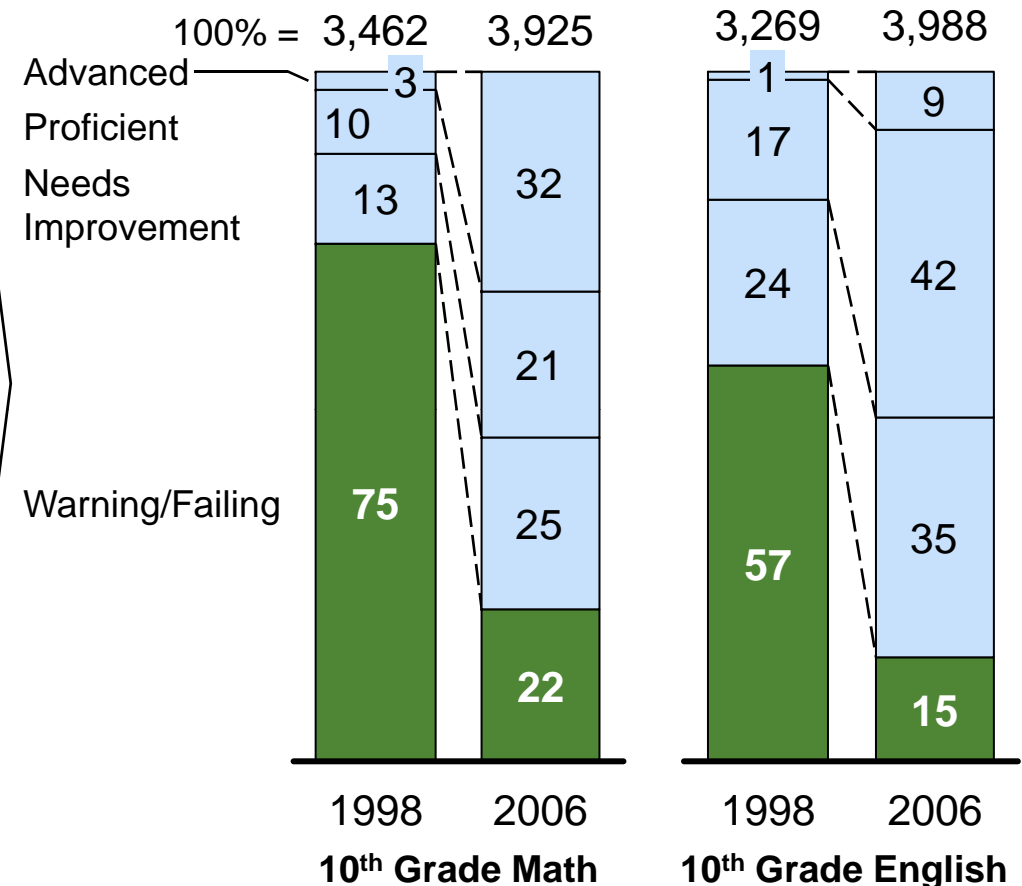
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Instituting performance culture in Boston contributed to a decrease in the number of failing students by more than 3-fold

Key reforms

- Upgraded incoming teacher quality and culled low performers**
 Established Boston Teaching Residency program to attract new talent and established district-level capacity to manage teacher termination process for/with principals
- Used data to manage performance**
 For example, used student performance data to focus teacher training
- Heavily invested in teacher professional development**
 Significant on-the-job coaching, common planning time, and best practice sharing
- Supported teachers with Principals focused on excellent instruction**
 Extensive principal training, and replaced 75% principals over course of reform

Boston Public Schools Performance on State Tests
Percent of Students



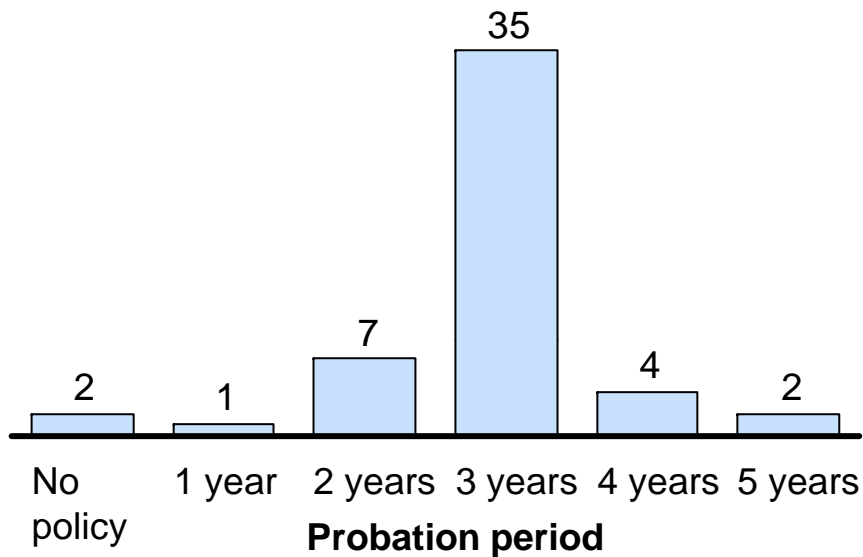
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Teachers – performance management

Our current system offers automatic tenure early in teachers' careers and does not remove teachers who are ineffective

Tenure decisions come early and are automatic

Number of states



In states with tenure, 98% of eligible teachers achieve it

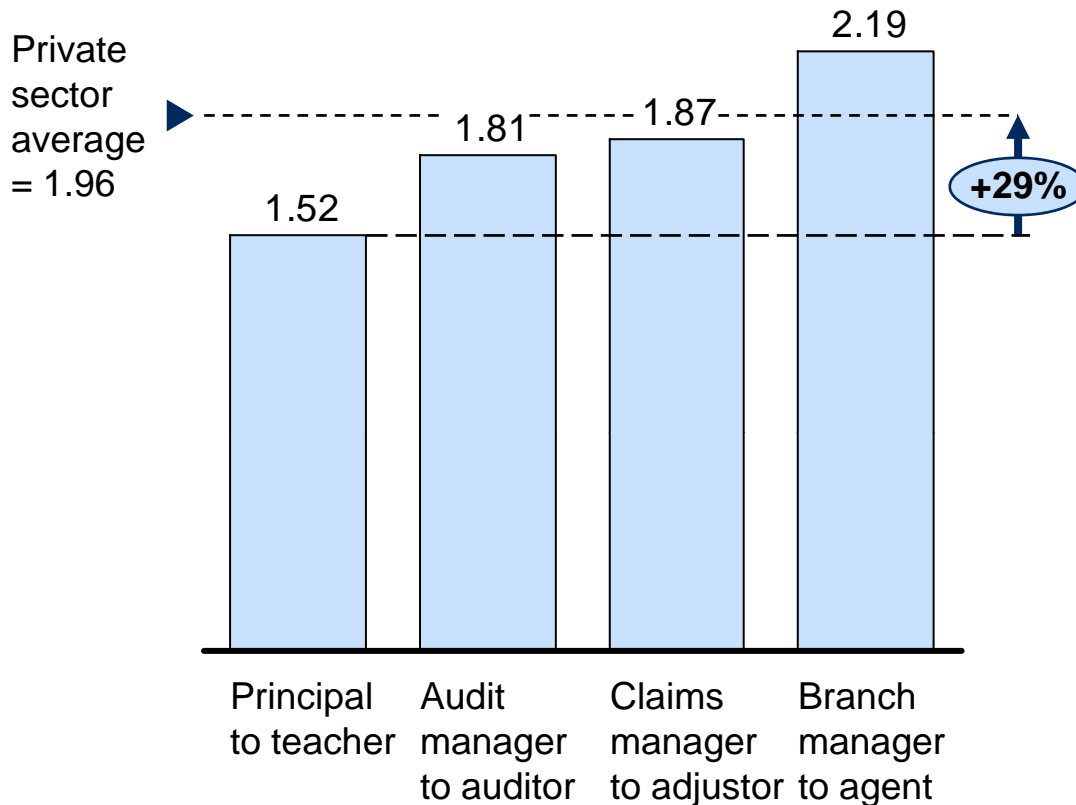


- There is virtually no post-tenure, performance-based attrition (e.g., NYC dismissed 14 out of 80K teachers for incompetence in 2006)
- Given the challenges, the Implication may not be to push back the tenure decision but to focus on exiting low-performing, pre-tenure teachers
- Over 80% grant tenure after 3 or more years suggesting change in tenure practices is possible

School leaders – employee value proposition

School leadership salaries are not competitive relative to private sector comparables

Ratio of leader to staff salary



- Raising school leadership salaries to private sector ratio would cost \$780 million per year in the top 100 high-need districts and \$3.5 billion per year for the entire U.S. public education system
- Adjusting for an increase in teacher salaries to the international “sweet spot” (95-99% GDP) in addition to changing the ratio would add an additional cost of \$600-770 million per year in the top 100 and \$2.7-3.4 billion per year for the U.S. overall

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Some districts are moving forward with incentive pay for principals

	Maximum incentive amount	Criteria for evaluation
Houston Independent School District	<ul style="list-style-type: none">• \$9,000<ul style="list-style-type: none">– \$6,000 local funds– \$3,000 federal match	<ul style="list-style-type: none">• School’s overall performance in meeting incentive goals (measured by ratio of incentives earned over maximum possible incentives in school and teacher performance pay plan)
Pittsburgh Public Schools	<ul style="list-style-type: none">• \$10,000 bonus• \$2,000 pay raise	<ul style="list-style-type: none">• Bonus based on student achievement (80%) and the school’s performance in achieving its own school objectives (20%)• Raise based on mastery of identified best practices
New York City Schools	<ul style="list-style-type: none">• \$25,000 raise• \$25,000 bonus	<ul style="list-style-type: none">• Raise based on working 3+ years in high-need school• Bonus based on school performance and student achievement

School leaders – employee value proposition

In high-need systems, the school leader role is undesirable due to inhibitive policies and limited district support

	Key insights	Evidence
Inability to focus on instruction	<ul style="list-style-type: none"> Principals are overwhelmed with paperwork and administration 	<ul style="list-style-type: none"> 66% of principals' time spent on managerial tasks*
Lack of support	<p>Most principals do not have sufficient staff within their buildings to whom to delegate</p> <p>Principals do offices feel that their districts/central offices support them</p>	<ul style="list-style-type: none"> Each year, a principal faces a 20% chance of working with a new superintendent
Limited professional development	<ul style="list-style-type: none"> Principal professional development is lacking except during early tenure years and in isolated districts <p>Many principals lack critical skills and have no mechanism through which to fill the gaps</p> <p>Principals are wanting for a support network and camaraderie with other principals</p>	<p>Assessments found principals deficient in key skills such as developing others and setting instructional goals**</p>
Authority not commensurate with accountability	<ul style="list-style-type: none"> Principals are highly frustrated by their inability to shape their team <p>Moving out non-performing teachers is a multi-year time-consuming ordeal</p> <p>The only way to get things done is to work around the system</p>	<ul style="list-style-type: none"> Union contracts prevent school leaders from forming and modifying effective school leadership teams

Principal turnover in urban areas regularly reaches 12% a year

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* Represents average of Jefferson County 23 elementary school principals

** NASSP assessment of ~50 principals of varied tenure

School leader pipelines are weak because candidates nominate themselves after completing preparation that is of limited effectiveness

Sourcing

- Candidates currently nominate themselves by passing certification requirements and applying for open positions
- Certification requirements act as a barrier to outside talent that may otherwise serve as effective leaders
 - Private and charter schools source ~10% of principals from outside education
 - 40+ states require candidates to acquire a license in school administration in order to apply
 - Licensure programs typically require 3+ years of K-12 teaching experience, completion of a graduate degree in education administration, and an internship

Initial training

- 96% of principals say their colleagues were more helpful than graduate studies in preparing them for the job
- 67% of principals report that “leadership programs in graduate schools of education are out of touch” with what principals need to know
- Limited principal training time devoted to management best practices
 - 6-7% on accountability, data, research, or technology as management tools
 - 3% on hiring, identifying, and rewarding good employees or identifying and removing ineffective ones

Changing times are undermining union power

	Description	Example
Growing internal tension between novice and veteran teachers	<ul style="list-style-type: none">• Veteran teachers find the unions necessary and support traditional union agenda focusing on higher pay, benefits, and better working conditions• Novice teachers are concerned with effective professional development, career opportunities and are not supportive of confrontational tactics	<p>“We are running a couple of parallel organizations” – Rhonda Johnson, President of Columbus Education Association</p>
Rising industry-based bargaining practices	<ul style="list-style-type: none">• Industrial unionism based on “hostile, adversarial negotiation process” is no longer effective• Hybrid bargaining is becoming the standard – combining traditional methods with interest-based bargaining where both sides openly discuss their interests and generate a joint solution	<p>“Interest-based works better with the sidebar issues than it does with the financial issues. Money issues just generally tend to drift to traditional bargaining” – Tom Lynch, President of Westminster Education Association</p>
Increased availability of accountability measures	<ul style="list-style-type: none">• NCLB requirements have pushed unions to advocate for data systems to ensure that multiple measures are used for evaluating schools• Union support for data systems opens the door to an argument for linking student data to teacher performance	<p>“[NCLB should] include multiple measures of student learning and school effectiveness...to measure student learning and school performance” – NEA website</p>

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