Differentiated Compensation Plans: Context, Status, and Direction

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Bio

- Assistant Professor of Public Policy and Education; Director, National Center on Performance Incentives.
- Led major evaluations of educator pay programs in United States, including Austin (TX), Nashville (TN), New York City, Round Rock (TX) at district-level and Tennessee and Texas at state-level.
- Testified on differentiated compensation plans in Florida, New York, Oklahoma, Tennessee, and Texas.
- Served on numerous advisory boards charged with designing and evaluating educator performance pay plans.

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Overview

1. Differentiated Compensation and Performance Pay Debate
2. Review of Research
3. What Next?

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1. Differentiated Compensation and the Performance Pay Debate

Differentiated Compensation Plans

- Efforts to reform single salary schedule have emerged in virtually every decade since the 1950s.
- Types of reforms can be classified into a handful of categories.
  - Pay for performance / merit pay
  - Knowledge- and skill-based pay
  - Career ladders

  → Awards based on predetermined tasks /outcomes

  - Hard-to-staff subjects
  - Hard-to-staff schools
  - Recruitment and retention awards

  → Market-oriented

Source: Springer, M.G. (2009). *Performance Incentives: Their Growing Impact on American K-12 Education*. Washington, DC: Brookings Institution Press.

Educator Performance Pay Debate

- Many contend pay for performance is an ideal alternative to single salary schedule.
  - Motivation
  - Selection or compositional effect
  - Align interest and goals
- Sturdy and influential base of stakeholders opposes performance pay.
  - Crowding-out of intrinsic rewards
  - Lack appropriate measures and technical capacity
  - Empirical evidence is inconclusive

2. Review of Research

Summary of Research

- Direct evaluation literature is slender.
- Literature reports generally null effects.
- Literature is not sufficiently robust to prescribe how systems should be designed (i.e., optimal size of bonuses, mix of individual and group incentives, etc).
- Studies have focused primarily on short-run motivational effects, with very little attention on compositional effect.
- Most rigorous evidence comes from abroad.

Grades of Social Science Research

Experimental	• Provide the best method possible to examine a cause and effect situation. • Random sampling, random assignment, controlled implementation.
Quasi-Experimental	• Comparative studies that carefully attempt to isolate the effect of an intervention through means other than randomization. • No "true" control group, lacks randomization, may not control intervention.
Correlational	• Describes relationship among variables in a particular sample. • Time series design or cohort or case control analysis.
Descriptive	• Describes characteristics of a single sample or exploratory study.

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Prior Research (United States)

Program (location / year)	Design	Sample	Treatment	Focus	Evaluator
POINT *(Nashville, TN / 2007 - 2009)*	RCT	≈ 300 teachers	Teacher	Student outcomes Teacher attitudes / behavior Org. dynamics Cost-effectiveness	Nat. Ctr. on Performance Incentives (NCPI)
Project on Team Incentives *(Rnd. Rock, TX 2009 - 2011)*	RCT	82 teams	Team (grade-level)		
Project REAL *(Chicago, IL 2008 - 2011)*	RCT	32 schools	Hybrid (teacher and school)	Student outcomes Teacher attitudes Teacher behavior	Mathematica Policy Research
School-Wide Perf. Bonus Program *(New York City 2008 –10)*	RCT	≈ 200 schools	School	Student outcomes Teacher attitudes / behavior Org. dynamics Teacher mobility	RAND / Nat. Ctr. on Performance Incentives (NCPI); Fryer
FRYER STUDY *(Chicago 2012)*	RCT	9 schools	Teacher / School	Student outcomes Teacher attitudes / behavior Org. dynamics Teacher mobility	Fryer, Levitt, List, and Sadoff (2012)

Note: RCT = randomized, controlled trial; RD = regression discontinuity.

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Design Component	Types/Forms	Definition
Incentive Structure	○ Rank order tournament ○ Fixed perform. contract	The scheme or mechanism that guides the allocation of awards in a pay for performance system.
Unit of Accountability	○ Individual unit ○ Team/group unit ○ School unit	The entity responsible for a measurable product or service whose performance on that measurable dimension determines bonus eligibility.
Performance Measures	○ Inputs ○ Processes ○ Outputs	The evaluation criteria for gauging employee performance.
Standards and Thresholds	○ Linear models ○ Limited linear models ○ Threshold levels (i.e., Step function)	Determines the required level of performance for a school, team of teachers, or individual teacher to secure a reward.
Size of Bonus Award; Bonus Distribution	○ Egalitarian ○ Hierarchical individualist	The size of bonus, or payout level, refers to the amount of the total bonus award. Distribution refers to the guidelines that determine the share of teachers that receive a bonus.
Payout Frequency	○ Multiple times per year ○ One time per year	The rate of award distribution as well as the time interval between assessment of the incentivized activity and distribution of the performance award.

Source: Springer, M.G. and Balch, R. (2010). *Design Components of Incentive Pay Programs*. OECD Report.

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Types of performance measures

Input → **Processes** → **Outputs**

- Professional development
- Knowledge- and/or skill acquisition
- Student and/or teacher attendance
- Student, parent, and/or supervisor evaluation of teacher
- Student, parent, and/or supervisor evaluation of school learning environment

- Student achievement levels
- Student test score gains
- Number of credit units earned per student
- Students receiving matriculation certification
- Student dropout rate
- Student pass rates
- Student retention

Prior Research (United States)

Program (location / year)	Design	Sample	Treatment	Findings
POINT *(Nashville, TN / 2007 - 2009)*	RCT	≈ 300 teachers	Teacher	No effect on overall student achievement
Project on Team Incentives *(Rnd. Rock, TX 2009 - 2011)*	RCT	82 teams	Team (grade-level)	No effect on overall student achievement
Project REAL *(Chicago, IL 2008 - 2011)*	RCT	16 schools	Hybrid (teacher and school)	No effect on overall student achievement
School-Wide Perf. Bonus Program *(New York City 2008 –10)*	RCT	≈ 200 schools	School	No effect on overall student achievement; no effect on teacher retention rates after 2 years
Fryer et al *(Chicago 2012)*	RCT	9 schools	Teacher / School	Large, positive effect on student achievement (only 1 year)

Note: RCT = randomized, controlled trial

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Prior Research (International)

Program (country / yr.)	Design	Sample	Treatment	Results
APRESt (India / 2006-08)	RCT	500 sch. 68k stud.	Teacher	+ high-stakes test (.16 to 0.19 std. dev.). + low-stakes test (0.11 to 0.18 std. dev.).
			School	+ test-prep, freq. assigned homework, help outside class, focused on low-perf. students.
			2 input txs. (para-prof. or block grant)	teacher tx. > school tx. school tx. > both input txs. both input txs = control.
Christelijk Steuenf. Incentive *(Kenya /98-99)*	RCT	100 sch. 1k tch. 51k stud.	School	+ high-stakes test. +/- low-stakes test (coached test-taking skills).
				+/- tch. attend., inst. practices, and freq. hw. + freq. out-of-school test-prep.
School Perf. Prog. *(Israel /94-97)*	RD	62 sch.	School	+ test score
				+ total credit hrs. earned, science credit hrs. earned, and percent. stud. taking matriculation exam.
Teacher Incentive *(Israel /2001)*	RD	27 sch. 4k stud.	Teacher	+ exit exam credits earned in mathematics (18 percent) and reading (17 percent)

Note: RCT = randomized, controlled trial; RD = regression discontinuity.

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Summary of Current Research

- A handful of rigorous evaluations have been launched in U.S. since 2006, but many more are needed.
- Studies evaluate the impact of program on student achievement, teacher attitudes, teacher behavior, institutional/organizational dynamics, cost-effectiveness, etc.
- Need to begin comparing different performance pay models (e.g., individual vs. team awards; small vs. large bonuses; single vs. multiple performance metrics).
- Continue to identify and advance different measures of teacher performance.
- Compensation reform is not cure all.

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3. What Next

What Next?

- More thoughtful, complete investment in human capital systems (still run risk of layering on top of existing policies and compensation practices)
- Shift to market oriented compensation systems
  - Salary differentials by field
  - Effective teacher retention bonuses in high need schools (Springer, Swain, Rodriguez, 2014)
- Still need to link educational research, practice, and policy communities

Differentiated Compensation Plans

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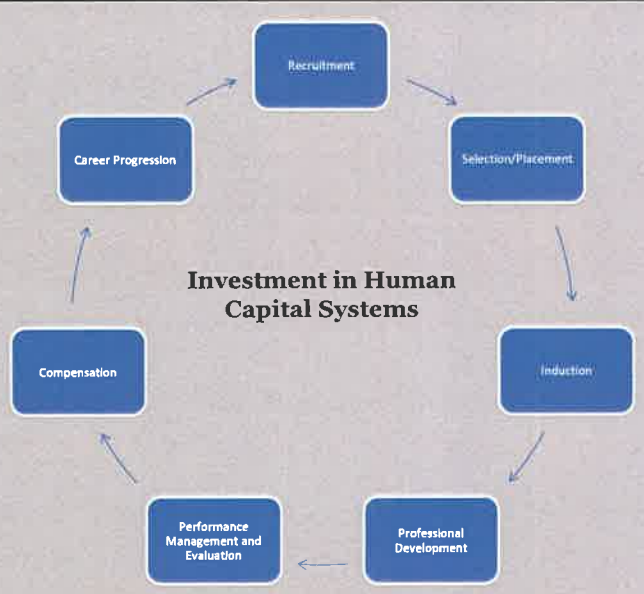
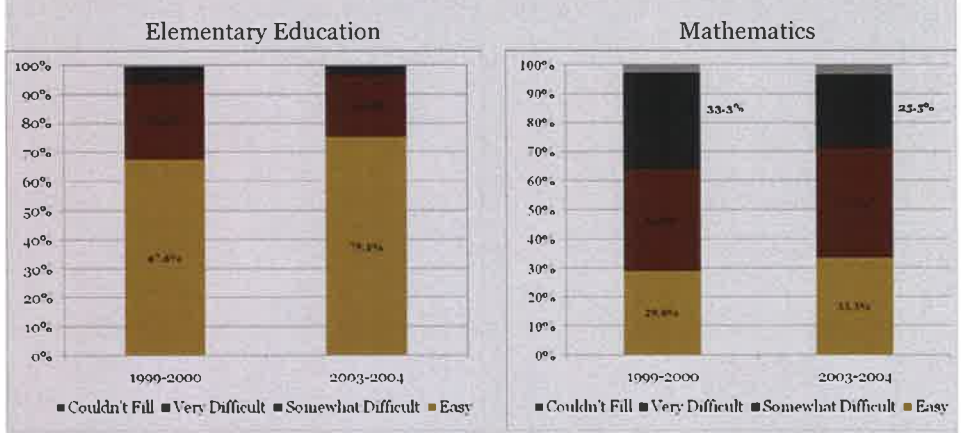
Source: Springer, M.G. (2009). *Performance Incentives: Their Growing Impact on American K-12 Education*. Washington, DC: Brookings Institution Press.



Salary Schedule Suppresses Pay Differentials by Field



Source: Podgursky, M. and Springer, M.G. (2012). Teacher Compensation Systems in the United States K-12 Public School System. *National Tax Journal*, 64, 165-192.

Effective Teacher Retention Bonuses in TN

- Highly effective teachers in high priority schools are 5 times more likely to exit school than highly effective teachers in the average TN public school
- $5,000 retention bonuses for highly effective teacher in priority schools (bottom 5% of schools in state)
- Find that retention bonus increases predicted probability of retention by approx. 23 percent (compared to teachers just below the highly effective teacher cutoff)
- This is huge considering a highly effective teacher is 1.7 standard deviations above the average teacher's effectiveness hired by high priority schools in TN

Source: Springer, M.G., Swain, W., and Rodriguez, L. (2014). Effective Teacher Retention Bonuses: Evidence from Tennessee. TN Consortium on Research, Evaluation, and Development Working Paper

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Thank you

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