The Effect of Performance-Pay in Little Rock, Arkansas on Student Achievement

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Previous Research on Performance Pay in Education

- Figlio and Kenny (2006) – supplemented NELS with survey data and found that schools that offered teachers individual rewards had higher student achievement.

- Keys and Dee (2005) – students randomly assigned to TN teachers improved achievement if their teacher participated in a career ladder incentive program.

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Achievement Challenge Pilot Project in Little Rock

- Began with one elementary school in 2004-5, added another in 2005-6, and three more in 2006-7, with funding coming from private donors and the school district

- Bonuses provided to teachers based only on student improvement in test scores

- Because of data limitations, study focuses only on results for three elementary schools after one year

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Summary of ACPP Payouts by School

School	Year	Total Bonus	Highest Teacher Bonus	Lowest Teacher Bonus	Average Teacher Bonus	Total Enrollment	Average Cost Per Pupil
Mabelvale	2006-2007	$39,550	$6,400	$450	$1,187.50	338	$117
Geyer Springs	2006-2007	$64,530	$7,600	$350	$2,846	333	$194
Romine	2006-2007	$12,450	$5,200	$450	$723	365	$34

Baseline Descriptive Statistics

	All	Never Treated	Eventually Treated
Black	0.69	0.67	0.88
Asian	0.02	0.02	0.00
Hispanic	0.04	0.04	0.06
Indian	0.00	0.00	0.00
Male	0.50	0.50	0.52
Eligible for Free or Reduced Lunch	0.65	0.63	0.88
Baseline Math	50.41	51.15	38.57
Baseline Reading	50.16	51.12	40.53
Baseline Language	49.87	50.88	40.21
Math Gain 2006	1.94	2.14	-1.29
Reading Gain 2006	1.83	1.89	1.19
Language Gain 2006	0.00	0.18	-1.75

Main Results

	Math	Reading	Language
Treatment Effect in NCE	3.52 ***	3.29 **	4.56 ***
Treatment Effect in Standard Deviations	0.16	0.15	0.22

$$Y_{i,a,t} = \beta_o + \beta_1 Y_{i,a,t-1} + \beta_2 Student_{i,t} + \beta_3 School_{i,t} + \beta_4 Year_t + \beta_5 Treat_{i,t} + \varepsilon_{i,t}$$

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Results by Teachers' Prior Experience

	Math	Reading	Language
Treatment	6.93 ***	3.63 *	4.24 **
Treatment * 2006 Gain for Teacher	-0.48 ***	-0.35	-0.50 ***

$$Y_{i,a,t} = \phi_o + \phi_1 Y_{i,a,t} + \phi_2 Student_{i,t} + \phi_3 School_{i,t} + \phi_4 Year_t + \phi_5 \Pr e\_Gain_{i,a} +$$
$$\phi_6 Treat_{i,t} + \phi_7 (\Pr e\_Gain_{i,a} * Treat_{i,t}) + \rho_{i,t}$$

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Conclusions

- Limited evidence suggests that student achievement improves when teachers are eligible for bonuses based on achievement gains

- Greatest gains are made by teachers who were previously least effective

- These results do not address possible "compositional" effects

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Conclusions (Continued)

- But small sample over limited time

- Does not address the correct mix of individual vs. group rewards

- Does not address the ideal mix of test gain vs. peer or supervisor assessment vs. additional credentialing

- Much still to be learned but initial results encouraging

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