

Information and Employee Evaluation: Evidence from a Randomized Intervention in Public Schools

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The evidence that productivity varies greatly across teachers has given rise to the idea that student achievement data should be included in performance evaluation, despite limited empirical evidence on subjective evaluation or the use of objective performance measures in U.S. public schools. The authors' analysis establishes several facts consistent with a simple Bayesian learning model of employee evaluation in the presence of imperfect information. These facts include:

1. Objective teacher performance estimates based on student data and principals' prior beliefs are positively correlated, and the strength of this relationship rises with the precision of the objective estimates and the precision of subjective priors.
2. Principals who are provided with objective performance data incorporate this information into their posterior beliefs, and do so to a greater extent when the data are more precise and when their priors are less precise.

After the provision of performance data, the probability of job separation rises for teachers with low performance estimates, and, in line with this change in attrition patterns, student achievement exhibits small improvements the following year. These results suggest that objective performance data provides useful information to principals in constructing employee evaluations and using these evaluations to improve productively.

The federal government is encouraging states and school districts to use student achievement growth in measures of teacher effectiveness and to implement policies to "recruit, develop, reward, and retain effective teachers" as part of the incentives built into its \$4.3 billion Race to the Top Fund. This paper examines how managers develop and use subjective evaluations, and how these processes are affected by the presence of objective performance data. The study is done in the context of a pilot program conducted by the New York City Department of Education (DOE) during the school year 2007-2008.

The goals of the DOE pilot program were to develop the internal capacity to estimate teacher value-added, design and disseminate reports to principals, and train principals to understand the methodology and the reports.

A simple Bayesian learning model is used to consider the principal's evaluation problem. Principals accumulate information regarding the effectiveness of their teachers and use this information to construct their beliefs. The model does not give clear predictions for the actions that treatment principals might take in reaction to the value-added information they receive. The Bayesian learning model does predict that principals would place relatively more weight on value-added reports that were relatively more precise and less weight on value-added estimates for the teachers for whom they had a relatively precise prior.

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