

Authors

Esther Duflo
Massachusetts Institute of Technology

Rema Hanna
Harvard University

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Incentives Work: Getting Teachers to Come to School

By ESTHER DUFO, REMA HANNA, AND STEPHEN P. RYAN

We use a randomized experiment and a structural model to test whether monitoring and financial incentives can reduce teacher absence and increase learning in India. In treatment schools, teachers' attendance was monitored daily using cameras, and their salaries were made a nonlinear function of attendance. Teacher absenteeism in the treatment group fell by 21 percentage points relative to the control group, and the children's test scores increased by 0.17 standard deviations. We estimate a structural dynamic labor supply model and find that teachers respond strongly to financial incentives. Our model is used to compute cost-minimizing compensation policies. (JEL: I21, J31, J45, O15)

Many developing countries have expanded primary school access. These improvements, however, have not been accompanied by improvements in school quality. For example, in India, a nationwide survey found that 65 percent of children enrolled in grades 2 through 5 in government primary schools could not read a simple paragraph (Pratham 2006). These poor learning outcomes may be due, in part, to teacher absenteeism. Using unannounced visits to measure attendance, a nationally representative survey found that 24 percent of teachers in India were absent during school hours (Kremer et al. 2005).¹ Thus, improving attendance rates is necessary to make "universal primary education" a meaningful term.

Solving the absenteeism problem poses a significant challenge (see Banerjee and Duflo 2006 for a review). In many countries, teachers are a powerful political force, able to resist attempts to enforce stricter attendance rules. As such, many governments have shifted to instead hiring "para-teachers." Para-teachers are teachers who are hired on short, flexible contracts to work in primary schools and in nonformal education centers (NFEs) that are run by nongovernmental organizations (NGOs) and local governments. Unlike government teachers, it may be feasible to implement greater oversight and incentives for para-teachers since they do not form an

¹Duflo: Massachusetts Institute of Technology, 50 Memorial Drive, E51-255G, Cambridge, MA 02142, and NBER and IPAL (e-mail: eduflo@mit.edu); Hanna: Harvard Kennedy School, Mather 26, 79 JFK Street, Cambridge, MA 02138, and NBER and IPAL (e-mail: Rema.Hanna@hs.harvard.edu); Ryan: Massachusetts Institute of Technology, 50 Memorial Drive, E51-255G, Cambridge, MA 02142, and NBER (e-mail: stephen.ryan@mit.edu). This project is a collaborative venture involving many people. Foremost, we are deeply indebted to Siva Muralidhar and especially to Neelima Khanna and Piyanka Singh, who made this venture possible. We thank Rishi Sahas and Adhish Vasav for their excellent work coordinating the fieldwork, Greg Fischer, Shrinu Inam, Ronald Meucci, Collin Scott, and Radhika Viswanathan for providing superb research assistance. For their helpful comments, we thank referees, Abhijit Banerjee, Rachel Glenister, Michael Kremer, and Sanjiv Mahalanobis. We owe a special thanks to the referees, who made substantial suggestions that considerably improved the paper. For financial support, we thank the John D. and Catherine T. MacArthur Foundation.

²To view additional materials, visit the article page at <http://dx.doi.org/10.1257/aer.102.4.1241>.

³Teachers have some official nonteaching duties, but this absence rate is too high to be fully explained by this.

Monitoring Works: Getting Teachers to Come to School

We use a randomized experiment and a structural model to test whether monitoring and financial incentives can reduce teacher absence and increase learning in India. In treatment schools, teachers' attendance was monitored daily using cameras, and their salaries were made a nonlinear function of attendance. Teacher absenteeism in the treatment group fell by 21 percentage points relative to the control group, and the children's test scores increased by 0.17 standard deviations. We estimate a structural dynamic labor supply model and find that teachers respond strongly to financial incentives. Our model is used to compute cost-minimizing compensation policies.

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