

Authors

Esther Duflo
Massachusetts Institute of Technology

Pascaline Dupas
Princeton University

Michael Kremer
The University of Chicago



School governance, teacher incentives, and pupil-teacher ratios: Experimental evidence from Kenyan primary schools^{1,2}

Esther Duflo¹, Pascaline Dupas², Michael Kremer^{3,4,5,6}

¹ Massachusetts Institute of Technology, United States
² MIT, United States
³ MIT, United States
⁴ CPRE, United Kingdom
⁵ Stanford University, United States
⁶ Harvard University, United States
⁷ Brookings, United States
⁸ IZA, United States

ARTICLE INFO
 Article history:
 Received 16 March 2014
 Received in revised form 18 September 2014
 Accepted 24 November 2014
 Available online 9 December 2014
 JEL classification:
 O15
 O19
 O21
 Keywords:
 Contractual teachers
 PTA
 School-based management
 Teacher effort
 Test score gaps
 No-poison
 Corruption
 Decentralization
 Institutions

ABSTRACT
 Some education policymakers focus on bringing down pupil-teacher ratios. Others argue that resources will have limited impact without systematic reforms to education governance, teacher incentives, and pedagogy. We examine a program under which school committees at randomly selected Kenyan schools were funded to hire an additional teacher on an annual contract renewable conditional on performance, outside normal Ministry of Education civil-service channels. At one-quarter normal compensation levels, five students randomly assigned to stay with existing classes, one score did not increase significantly, despite a reduction in class size from 52 to 44 on average. In contrast, scores increased for students assigned to be taught by locally hired contract teachers. One reason may be that contract teachers had lower classroom sizes, while centrally hired civil-service teachers in which class only engaged contract teachers endogenously reduced class effort. Civil-service teachers also captured room for their families, with approximately 1.3 of contract teacher positions going to relatives of existing teachers. A governance program that empowered parents within school committees reduced both forms of capture. The best contract teachers obtained civil-service jobs over time, and we estimate large general-dynamic benefits from supplementing a civil-service system with locally hired contract teachers brought in on a probationary term and granted tenure conditional on performance.

¹ We thank John Akerlof, Paul Gertler, Nake Njiru, Victor Gump, Qing Miao, David McKenzie, Peter O'Neil, K. Antoinette Mutha, and seminar participants at the Harris School, Harvard, MIT, the World Bank, Dartmouth College, HEC, IZA, and the International Institute for Educational Research for their helpful comments and discussions. We thank the Kenya Ministry of Education, International Child Support Africa, and Matthew Jelen for their collaboration. We thank Wally Friedman, Jessica Morgan, Nicholas Walker, Len Tomlin, Victor Poskippan, and Peter Wang for their excellent research assistance. We are grateful to Grant Winters and his field team for collecting the data. We thank the World Bank and the Government of the Netherlands for the funding. Data collection was supported by Program 30091 grants 7134C3 and 7134C4. Michael Kremer made this study possible. The research project was approved by the following IRBs: MIT, Harvard, ICI and IRI Kenya.
² Corresponding author at: 300 Brook Hill, Brookline MA, 02445.
 E-mail address: eduflo@mit.edu (E. Duflo), pdupas@princeton.edu (P. Dupas), mkremer@uchicago.edu (M. Kremer).

1. Introduction
 Despite rapid expansion in school participation over the last decade or so, learning achievements remain poor in developing countries, and students score very low on internationally comparable tests (Khanikaht and Woernmann, 2010). Some policymakers seeking to address this problem focus on providing more resources (such as teachers or materials), while others focus on systemic reforms designed to improve governance and provider incentives.
 In this paper, we examine how these two approaches can complement each other. In particular, we demonstrate that the impacts of centrally provided resources (in our setting, extra teachers) are muted by

School Governance, Teacher Incentives, and Pupil-Teacher Ratios: Experimental Evidence from Kenyan Primary Schools

Some education policymakers focus on bringing down pupil-teacher ratios. Others argue that resources will have limited impact without systematic reforms to education governance, teacher incentives, and pedagogy. We examine a program under which school committees at randomly selected Kenyan schools were funded to hire an additional teacher on an annual contract renewable conditional on performance, outside normal Ministry of Education civil-

service channels, at one-quarter normal compensation levels. For students randomly assigned to stay with existing classes, test scores did not increase significantly, despite a reduction in class size from 82 to 44 on average. In contrast, scores increased for students assigned to be taught by locally-hired contract teachers. One reason may be that contract teachers had low absence rates, while centrally-hired civil-service teachers in schools randomly assigned contract teachers endogenously reduced their effort. Civil-service teachers also captured rents for their families, with approximately 1/3 of contract teacher positions going to relatives of existing teachers. A governance program that empowered parents within school committees reduced both forms of capture. The best contract teachers obtained civil service jobs over time, and we estimate large potential dynamic benefits from supplementing a civil service system with locally-hired contract teachers brought in on a probationary basis and granted tenure conditional on performance.

December 09, 2014