

Authors

Esther Duflo
Massachusetts Institute of Technology

Pascaline Dupas
Princeton University

Michael Kremer
The University of Chicago

American Economic Review 102 (August 2012): 1736–1754
<http://www.aeaweb.org/articles.php?doi=10.1257/aer.102.5.1736>

Peer Effects, Teacher Incentives, and the Impact of Tracking: Evidence from a Randomized Evaluation in Kenya¹

By ESTHER DUFOLO, PASCALINE DUPAS, AND MICHAEL KREMER²

To the extent that students benefit from high-achieving peers, tracking will help strong students and hurt weak ones. However, all students may benefit if tracking allows teachers to better tailor their instruction level. Lower-achieving pupils are particularly likely to benefit from tracking when teachers have incentives to teach to the top of the distribution. We propose a simple model nesting these effects and test its implications in a randomized tracking experiment conducted with 121 primary schools in Kenya. While the direct effect of high-achieving peers is positive, tracking benefited lower-achieving pupils indirectly by allowing teachers to teach to their level. (JEL D21, J45, O15)

To the extent that students benefit from having higher-achieving peers, tracking students into separate classes by prior achievement could disadvantage low-achieving students while benefitting high-achieving students, thereby exacerbating inequality (Dennis Epple, Elizabeth Newlon, and Richard Romano 2002). On the other hand, tracking could potentially allow teachers to more closely match instruction to students' needs, benefitting all students. This suggests that the impact of tracking may depend on teachers' incentives. We build a model nesting these effects. In the model, students can potentially generate direct student-to-student spillovers as well as indirectly affect both the overall level of teacher effort and teachers' choice of the level at which to target instruction. Teacher choices depend on the distribution of students' test scores in the class as well as on whether the teacher's reward is a linear, concave, or convex function of test scores. The further away a student's own level is from what the teacher is teaching, the less the student benefits; if this distance is too great, she does not benefit at all.

¹Duflo: MIT Economics Department, 30 Memorial Drive, Building 321 room 1000, Cambridge, MA 02142 (e-mail: eduflo@mit.edu); Dupas: UCLA Economics Department, 5281 Boelter Hall, Los Angeles, CA 90095, NBER, CDFR, and IRGAD (e-mail: pdupas@ucla.edu); Kremer: Harvard University Department of Economics, Littauer Center, 1805 Cambridge Street, Cambridge, MA 02138 (e-mail: mikremer@fas.harvard.edu). We thank Josh Angrist, Abhijeet Banerjee, Michael Greenstone, Caroline Hoxby, Geoff Johnson, Brian Jacob, and many unnamed participants for helpful comments and discussions. We thank four anonymous referees for their suggestions. We thank the Kenya Ministry of Education, Science and Technology, International Child Support Africa, and Mathew Juma for their collaboration. We thank Jessica Morgan, Frank Schilbach, Ian Todd, Paul Wang, Nicolas Zedler, and especially Wilfrid Firdaus for excellent research assistance. We are grateful to Gauri Mahadeo and her field team for collecting all the data. We thank, without implicating, the World Bank and the Government of the Netherlands for the grant that made this study possible.

²To view additional materials, visit the article page at <http://www.aeaweb.org/articles.php?doi=10.1257/aer.102.5.1736>.

1739

Peer Effects and the Impact of Tracking: Evidence from a Randomized Evaluation in Kenya

To the extent that students benefit from high-achieving peers, tracking will help strong students and hurt weak ones. However, all students may benefit if tracking allows teachers to better tailor their instruction level. Lower-achieving pupils are particularly likely to benefit from tracking when teachers have incentives to teach to the top of the distribution. We propose a simple model nesting these effects and test its implications in a randomized

tracking experiment conducted with 121 primary schools in Kenya. While the direct effect of high-achieving peers is positive, tracking benefited lower-achieving pupils indirectly by allowing teachers to teach to their level.

October 01, 2011