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## Many Children Left Behind? Textbooks and Test Scores in Kenya

By PAUL GLEWWE, MICHAEL KREMER, AND SYLVIE MOULIN

*A randomized evaluation in rural Kenya finds, contrary to the previous literature, that providing textbooks did not raise average test scores. Textbooks did increase the scores of the best students (those with high pretest scores) but had little effect on other students. Textbooks are written in English, most students' third language, and many students could not use them effectively. More generally, the curriculum in Kenya, and in many other developing countries, tends to be oriented toward academically strong students, leaving many students behind in societies that combine a centralized educational system; the heterogeneity in student preparation associated with rapid educational expansion; and disproportionate elite power. (JEL O15, I21, I28, J13)*

Many economists argue that increasing educational expenditure will have a limited impact on learning in distorted educational systems (e.g., Eric A. Hanushek 1995 and Lant Pritchett and Dean Filer 1999). Yet even skeptics of the impact of education spending in such systems believe that providing textbooks to schools where they are scarce can substantially increase test scores (see reviews by Stephen P. Heyneman, Joseph P. Farrell, and Manuel A. Sepúlveda-Stuardo 1978; Bruce Fuller 1986; Marjorie E. Lockwood and Hanushek 1983; and Fuller and Prerna Clarke 1994). Indeed, one political economy model of distortions in education suggests that spending on nonteacher inputs will raise student performance much more

\*Glewwe: University of Minnesota, Department of Applied Economics, 894 Buford Ave., St. Paul, MN 55108 and World Bank (e-mail: glewwe@umn.edu); Kremer: Harvard University, Department of Economics, Littauer Center M30, Cambridge, MA 02138, Brookings Institution, Center for Global Development, and NBER (e-mail: mkremer@fas.harvard.edu); Moulin: Rabat American School, BP 120 c/o American Embassy, Agdal, Rabat, Morocco (e-mail: smoulin@amfrs.net). This project was a collaboration by many people. The data were collected and analyzed by Charles Azezi, Naji Benhassine, Martin Chantou, Edward Oued, Daniel Hant, Suzanne Bui, David Levy, Anne Magu, Sam May, Ted Miguel, Robert Ngunjiri, Caroline Njirina, Wang Njoroge, Joseph Rockoff, Jasper Sevilia, Michael Washema, Polycarp Wawo, Stanley Watt, and Maureen Wicheb. Invaluable assistance was provided by the staff of International Christianly Schools: Chip Berry, Jos Holdings, Paul Lipworth, Japheth Muthiga, Rebecca Mwangi, and Susan Waly. We are grateful to Joshua Angrist, Angus Deaton, Paul Gertler, Charles Griffin, Douglas Griffin, Eric Hanushek, Lawrence Katz, Marketa Lockwood, Richard Marston, Steve Pischke, and Duncan Thomas for advice and comments. Finally, we are grateful to Joseph Patrick Mwangi, the district education officer of Busia, to the late George Rutoma, the inspector of primary schools in Busia, and to the headmasters, teachers, and students of the participating schools. The cost of this evaluation was covered by the National Science Foundation and the World Bank research committee. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors. They do not necessarily represent the views of the World Bank, its executive directors, or the countries they represent.

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