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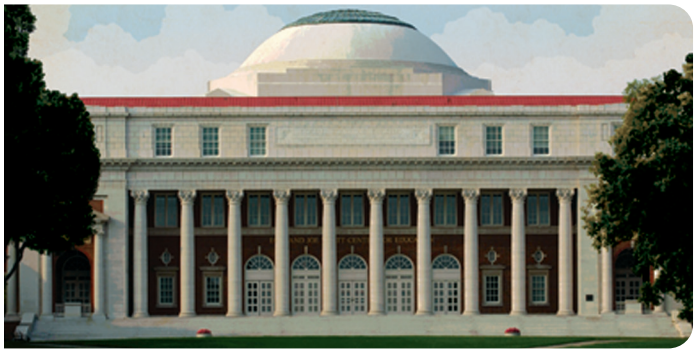
Research Brief



Teacher Incentives in Developing Countries: Experimental Evidence from Kenya

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In "Teacher Incentives in Developing Countries: Experimental Evidence from Kenya"— a paper presented at the National Center on Performance Incentives research to policy conference in February — Paul Glewwe (University of Minnesota), Nauman Illias (The Brattle Group), and Michael Kremer (Harvard University) review findings from recent research in Kenya on the impact of teacher incentives on teacher behavior and student achievement. Based on a randomized trial including teachers in Grades 4-8 in 100 rural schools in Kenya, the authors suggest that there is some evidence incentives impact student test scores. Students whose teachers were eligible for incentives had higher scores on the high-stakes exams; however, test scores on exams not linked to incentives did not increase significantly. Additionally, the test score advantage in treatment schools disappeared after the incentive pay program ended.

Why Study Incentives in Kenya?

Very little of the existing research on teacher incentives has focused on their use in developing countries, even though the majority of the world's primary school-aged children are born in low-income developing countries. Research from primary schools in Uganda, India, Ecuador, Peru, and Kenya does indicate that teacher absenteeism is a substantial problem; and even when teachers do report to work, in many cases they are not in their assigned classrooms.

The educational system in Kenya is much more centralized than the U.S. public education system. It is exceedingly difficult, if not impossible, to fire teachers who under-perform, and there is very little opportunity for professional or pay advancement. Most students attend primary school, but after eighth grade a national exam determines which students continue on to secondary school. Many underperforming students do not even make it to Grade 8, being held back to repeat Grade 7 or even dropping out.

The incentives that do exist in Kenya are derived from students' performance on national and district exams. Local communities are often responsible for raising the funds required to operate local schools; in some cases, parent committees provide small gifts to teachers when the school performs well on national exams. Powerful teacher union safeguards make it difficult to terminate teachers, and teacher transfers are sometimes used as an alternative to firing—moving the worst teachers to the least desirable locations.

Given the current state of the teacher workforce along with the limitations on students' academic advancement, Kenya provides an appropriate setting to study the impact that incentives might have on both teacher behavior and student achievement.

This study was implemented in two rural districts in Western Kenya. One hundred schools were selected

to participate; half were randomly placed in the treatment group, where teachers and headmasters were eligible for incentives based on students' performance on district exams. Only teachers in Grades 4-8 were included. Teacher incentives (e.g., plates, glasses, bed linens, suits) were based on the performance of all students in Grades 4-8, with each subject weighted equally to encourage teacher cooperation. The value of these incentives equates to anywhere between 21 and 43 percent of a teacher's monthly salary. Headmasters at top-performing and the highest improving schools were also eligible for incentives (e.g., wall clocks, bells, briefcases).

The Impact of Teacher Incentives

Teacher Outcomes

Teacher incentives in Kenya do not appear to have a significant impact on improving teacher attendance. Additionally, treatment and control teachers did not use different pedagogical methods, assign different amounts of homework, or exert variable energy levels in their work. Incentives did, however, result in an increase in the number of test preparation sessions that teachers led outside of school hours (i.e., courses designed to increase scores on district tests that were linked to incentive pay).

Student Outcomes

Student participation in comprehensive, end-of-year district exams is contingent on the payment of an exam fee—a fee that often precludes a sizeable proportion of students from taking the test altogether. As teachers' incentive eligibility was determined on the basis of students' performance on these exams, teachers in treatment schools had a strong motivation to encourage student test participation. Prior to the experiment, there was no statistically significant difference in test participation between the two school groups. In the first year of the experiment, participation in treatment schools was nearly six percent higher than in control schools, and up to 11 percent higher in the second year of the experiment. However, upon the experiment's conclusion, test participation in incentive schools was nearly two percent lower than in control schools.

Prior to the incentive experiment, there were no significant differences between treatment and control schools on student test scores. After two years of the experiment, student scores in treatment schools had increased by a statistically significant amount on the district exam, but not on any other exams. After the experiment's conclusion, the higher test scores in treatment schools did not remain.

Conclusion

Glewwe and his coauthors conclude that incentives do not extensively impact teacher behavior, but are related to increases in student test scores during the term of the program's operation only. They contend that the test score advantage in treatment schools stems from the increased test preparation and review sessions conducted by treatment school teachers, as well as from the encouragement teachers gave students to take the tests. Evidence from the experiment also suggests that student test score gains increased in the second year of the program, as teachers gained greater understanding of how incentive eligibility was determined. Given the temporary nature of this experiment, the authors conclude that teachers may not have focused on long-term student learning goals, but rather on short-term strategies to raise student test scores on the high-stakes district exams.

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