

Leveraging Teacher Incentives to Improve Student Performance and Reduce Dropout in Uganda

Researchers:

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Sector(s): Education**Fieldwork:** International Food Policy Research Institute (IFPRI)**Location:** Rural Uganda**Sample:** 302 schools, 9,000 students**Initiative(s):** Post-Primary Education Initiative**AEA RCT registration number:** AEARCTR-0001152**Data:** Dataverse**Research Papers:** Educator Incentives and Educational Triage in Rural Primary Schools**Partner organization(s):** International Growth Center (IGC), Spencer Foundation

Primary school teachers in Uganda face public scrutiny and high pressure around primary school exit exam results. As a result of the incentives around students being successful on this exam, teachers focus their energy on students who could receive passing marks and encourage lower-performing students to drop out prior to taking the exam. Researchers evaluated whether an alternative teacher incentive scheme, providing rewards based on the performance of all students, could help reduce dropout and improve student performance. Implementing the incentive scheme improved teacher effort. In schools with math books, the incentive scheme also improved student attendance, attainment, and achievement.

Policy issue

Although many low-income countries provide free primary schooling, primary achievement levels remain low and primary dropout rates remain high. In particular, several countries in Africa find enrollment drops sharply between the penultimate and final grades of primary school. One reason for this trend could be that schools face considerable pressure and public scrutiny for their students' performance on their primary school exit exams, which students must pass to attend secondary school and certify primary school completion. This pressure could incentivize teachers to devote additional time and energy to students who could receive passing marks on these exams and to encourage weak students to drop out prior to taking the exit exams. Could an incentive scheme for teachers that provides rewards based on the performance of all their students reduce dropout and improve student learning?

Context of the evaluation

In Uganda, almost all children enroll in primary school, but fewer than 60 percent complete all seven years and only 22 percent enroll in secondary school. In their last year of primary school, at the end of grade seven, all students take the national Primary Leaving Exam (PLE) to determine whether they receive a primary education credential and can access secondary schooling. Although the Ugandan education system does not explicitly assess schools based on the results of this exam, the government

publicizes school-level results. These results receive considerable local news coverage, and education officials often sanction school administrators and teachers who work in schools where significant numbers of students fail the PLE.

This system creates incentives for educators to urge weaker students to drop out of school before they reach the PLE exam. For example, teachers may devote limited attention to weaker students or encourage weaker students to drop out of school and seek jobs or vocational training instead. Head teachers could require weaker students to repeat grade six or inform them that they are unlikely to proceed to grade seven, thereby demotivating them and encouraging their drop out.



Primary school teacher and students in a classroom in Uganda.

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Details of the intervention

To address higher dropout rates in the year before the PLE exam, researchers evaluated the impact of a “Pay for Percentile” (PFP) teacher incentive program on student dropout, performance, and transition to secondary school in Uganda. The program rewards teachers based on how their students perform against comparable students from other schools. Among 302 rural government primary schools, researchers selected a random half to implement the new incentive program among math teachers in grade six classrooms. The other schools did not implement the program and formed the comparison group.

Near the beginning of the 2016 school year as part of a baseline survey, researchers established leagues of students with similar baseline learning levels by administering a math exam to all students in grade six. The math exam covered material ranging from grade one through grade six. Near the end of the year, students completed another exam with similar material coverage. Researchers gave each student a percentile rank based on performance relative to other students in their same league.

Each grade 6 math teacher in the treatment schools received a bonus based on how well each student on his/her roster performed relative to other students with similar baseline scores from other schools. If a student was absent on the day of follow-up testing, that student received a score of zero, thus penalizing teachers when their students drop out or attend school infrequently.

This reward system incentivizes teachers to keep their students in school and to invest time and effort in all students, including lower-performing ones.

Researchers conducted further follow-up surveys in 2017 to track student attendance rates, dropout rates, PLE registration rates, PLE assessment results, and secondary school enrollment rates.

Results and policy lessons

The PFP teacher incentive program in rural Uganda improved teacher effort. In schools with math books, PFP improved student attendance and, for better performing students, improved test scores. Meanwhile, in schools without math books, PFP did not improve attendance, achievement, or attainment among students.

Teacher Effort:

In both schools with and without math books, PFP improved teacher effort in regards to the number of days they were present over a five-day period and the number of hours per week they spent on preparing lessons and grading assignments. For example, teachers in the PFP group spent 16 more minutes grading assignments, a 12 percent increase relative to the comparison group.

Student Attendance and Attainment:

In schools with math books, the probability that students remained in their current school through the following school year increased by 7.0 percentage points, a 12 percent increase compared to 57 percent in comparison schools.

In schools without math books, researchers found no evidence of improved attendance for any group of students.

Student Achievement:

In schools with math books, PFP had no impact on average math assessment scores among students. However, higher performing students, whose math skills were closer to that of the grade six book exercises, performed 0.186 SD higher on exam items that were more closely related to the book content.

In schools without math books, researchers found no evidence of improved achievement among students.

These results suggest that the combination of teacher incentives and access to textbooks can together improve student learning outcomes.

Gilligan, Daniel O, Naureen Karachiwalla, Ibrahim Kasirye, Adrienne M. Lucas, and Derek Neal. "Educator Incentives and Educational Triage in Rural Primary Schools." *Journal of Human Resources*, forthcoming, doi: 10.3368/jhr.57.1.1118-9871R2.