

Improving teacher attendance using locally managed monitoring schemes

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Schooling and learning in Uganda

Since Universal Primary Education, substantial gains in enrollment.

- ▶ World Bank currently estimates net enrollment rate for primary school at 94 percent.

But *schooling isn't learning* (Pritchett 2013)

- ▶ *Uwezo* reports that only 10 percent of P3 pupils can read a P2-level story and solve a P2-level math problem.

School governance is part of the problem

Findings from Uganda *Service Delivery Indicators* (2013), led by EPRC in collaboration with the World Bank and IGC Lead Academic, Tessa Bold:

- ▶ At any given time, 23 percent of teachers are absent, and a further 29 percent of teachers are not teaching.
- ▶ Problems particularly acute in Northern and rural areas, with implication that pupils in public schools in the North receive only *50 days of teaching in the entire year*.

Punishment by DEOs is rare, and School Management Committees meet rarely and have limited understanding of their roles.

- ▶ Management activity levels and absenteeism don't correlate (Chaudhury et al. 2006)

Understanding 'bottom-up' approaches to accountability

Influential work in Uganda has highlighted the potential of *local actors* to improve service quality

- ▶ Improving access to central government financial resources (Reinikka and Svensson 2004, 2005);
- ▶ Quality and quantity of health services (Björkman & Svensson 2009).
- ▶ But elsewhere, informational interventions have had limited effect (Olken 2007), in education in India (Banerjee et al. 2008).

Understanding *how* local accountability interventions work is instrumental both for *intervention design* and *external validity*.

In recent IGC-supported collaborations, we explore questions of mechanism (Ludwig, Kling & Mullainathan 2011) and design (Pritchett, Samji & Hammer 2013).

1. Mechanisms of community-based monitoring with Abigail Barr, Frederick Mugisha, and Pieter Serneels

Field experiment

Our hypothesis: local capacity to overcome collective action problems is a necessary component for success of CBM interventions

To test this, we implement two variants on a 'school scorecard':

1. Standard design
including measures of teacher, pupil, and parent activities; physical inputs; school finances; health and welfare; or
2. Participatory design
in which SMC members design their own scorecard in an exercise emphasizing the collective setting of goals and targets.

Holding constant the composition of monitors, training intensity, and monitoring process.

Experimental design

- ▶ Allocation of schools to treatments
 - ▶ Sample: 100 rural, government primary schools in 4 districts of Uganda.
 - ▶ Randomly assigned 40 schools to control, 30 each to Standard and Participatory treatments, stratified by sub-county.
- ▶ Measurement
 - ▶ Scorecard content
 - ▶ Learning outcomes, as measured by Uganda National Examination Board's standardized tests
 - ▶ Unannounced visits to measure teacher and pupil absenteeism
 - ▶ VCM game, played at end of training with SMC members

Participatory approach improves presence and learning

- ▶ The participatory scorecard had substantial, and statistically significant, impacts on learning outcomes.
 - ▶ Impact of 0.19 standard deviations on UNEB exams is equivalent to 8 percentiles for a pupil starting at the median.
 - ▶ Smaller ($\approx .08sd$) and statistically insignificant effects of participatory approach.
- ▶ Similar results for . . .
 - ▶ Teacher attendance: 13** percentage point impact (participatory) versus 9 percentage points (standard)
 - ▶ Pupil attendance: 9** percentage point impact (participatory) versus 4 percentage points (standard)
- ▶ Results consistent with education production as *collective action problem*.

Why should we attribute differences to collective action?

1. Information overlap: Participatory scorecards do not generally include issues that are not present on the standard instrument.
2. Dominance: Participatory scorecards have bigger impacts even on indicators (teacher and pupil absence) for which there was an informational advantage in the standard instrument.
3. Direct evidence of mechanisms: VCM game results reveal a causal effect of the participatory treatment on public good contributions in the lab.

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2. Designing delegated monitoring

with Jacobus Cilliers, Ibrahim Kasirye, Clare Leaver,
and Pieter Serneels

The challenge of delegated incentives

A parable of cameras, band-aids, and bicycles



(Duflo & Hanna 2006)

The challenge of delegated incentives

A parable of cameras, band-aids, and bicycles

“Putting a band-aid on a corpse”

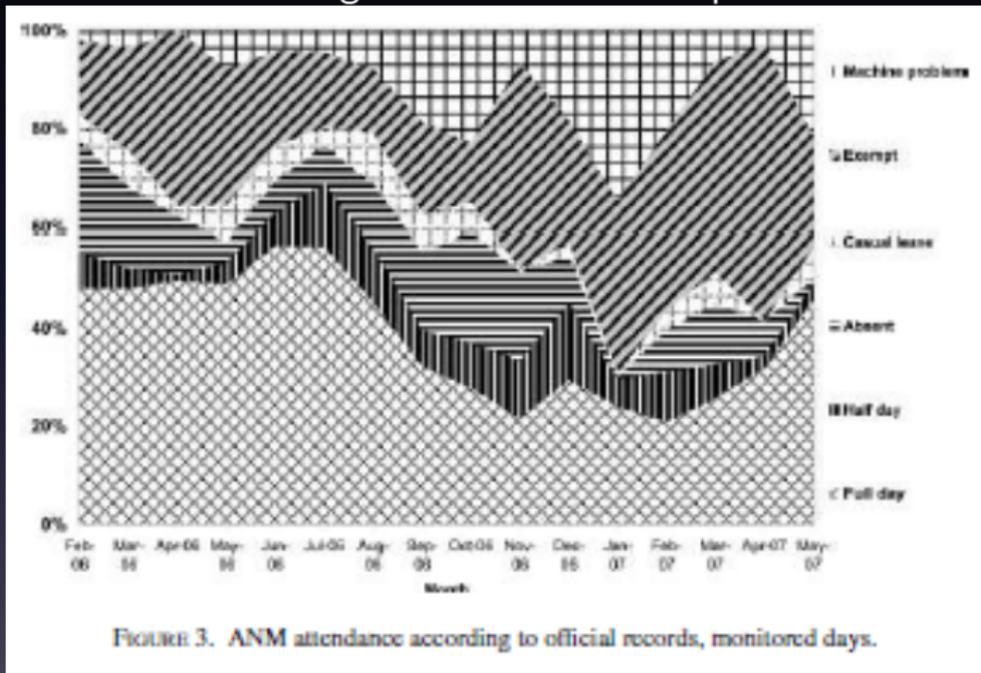


FIGURE 3. ANM attendance according to official records, monitored days.

(Banerjee, Duflo & Glennerster 2007)

The challenge of delegated incentives

A parable of cameras, band-aids, and bicycles



(Chen, Glewwe, Kremer & Moulin 2001)

Design

Information and technology

Working with the Makerere University School of Computing and Informatics Technology and World Vision, we train school stakeholders in the use of a mobile-based platform for reporting teacher presence.

- ▶ A Java-based platform (openXdata) that allows
 1. school-specific forms to track presence of teachers in that school;
 2. users to log in under private IDs;
 3. re-broadcast of summary results to school stakeholders via SMS.

- ▶ Form can be added to any Java-enabled phone, but we provide one phone per school to be sure.

Locally Managed Schemes

We implement an RCT that considers two design dimensions.

1. Monitors

- ▶ Parents on the SMC.
Told that we will randomly select one report per week as the *qualifying report*.
- ▶ Head teachers, assisted by their deputies.
Told that we will randomly choose one day per week and then a report (if there is one that day) as the qualifying report.

2. Stakes

- ▶ Information only: qualifying reports collated centrally and a summary sent back to schools.
- ▶ High stakes: as above but teacher receives a bonus of UShs 60,000 if marked present in every qualifying report that month.

Design

We carry out this study in 180 rural, government primary schools, drawn from 6 districts: Apac, Gulu, Hoima, Iganga, Kiboga, Mpigi.

40 schools allocated to a control group, and 90 to one of 4 'basic' monitoring schemes:

- ▶ Head teachers, information only: 20 schools.
- ▶ Head teachers, high stakes: 25 schools.
- ▶ Parents on SMC, information only: 20 schools.
- ▶ Parents on SMC, high stakes: 25 schools.

Remaining 50 schools allocated to a pilot of *multiple monitors*.

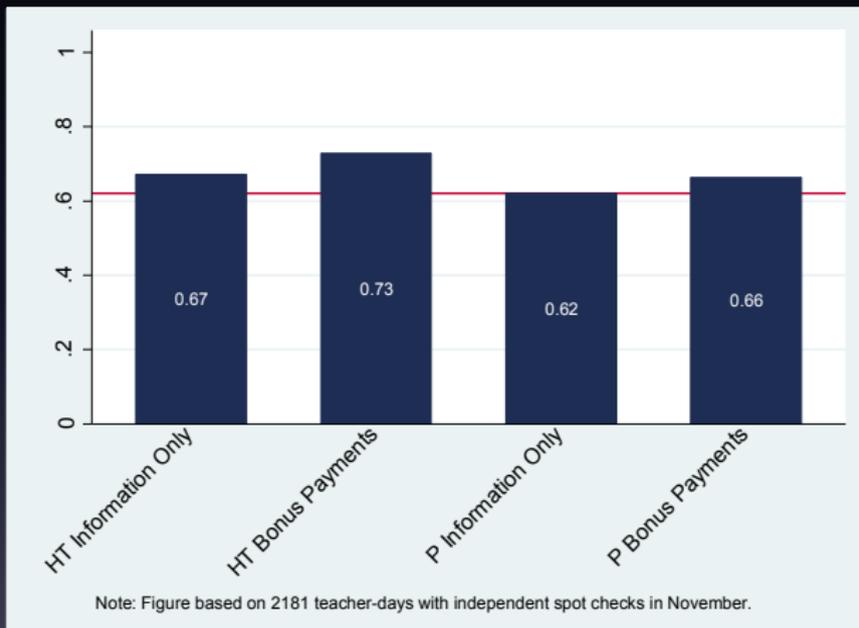
Data

To study performance of these alternative locally managed schemes, we combine two data sources:

1. Reported teacher presence
(generated by the intervention, at the teacher-day level); and
2. Actual teacher presence
(generated by our spot-checks, also at the teacher-day level).

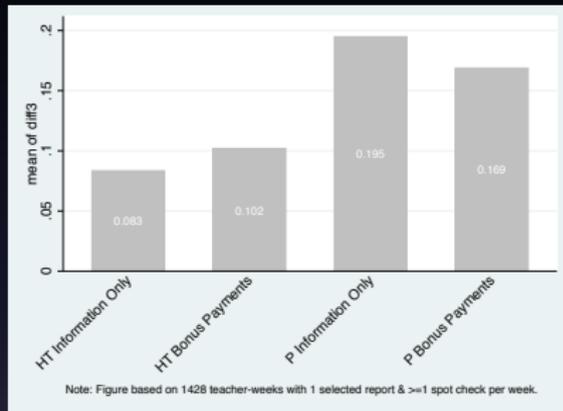
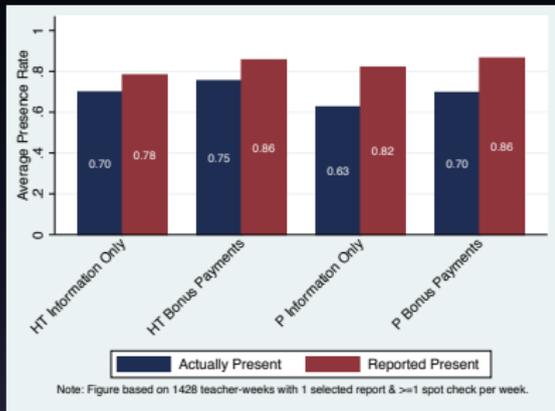
We present preliminary impacts of alternative designs on teacher presence, cost, and quality of reporting in turn.

Head teacher led monitoring with bonus payment substantially improves teacher presence



Bars show proportion of teacher-spot-check days where teacher is present.

All monitors overstate presence but parents far more so



Blue bars show the proportion of teacher-spot-check-days where teacher is actually present. Red bars show the proportion of teacher-reporting-days where teacher is reported present. Grey bars (RHS) show the difference.

Multiple monitors

Results so far do not seem to favor parents as monitors, at least under their more flexible protocol.

But results from our pilot of *multiple monitors* suggest parents can play an important role in improving outcomes.

Design:

- ▶ Head teachers carry primary burden of monitoring, submitting daily attendance logs.
- ▶ Parents play the role of auditors.
- ▶ Teacher qualifies for bonus payment only if both head teacher and parent mark him/her present on the same day.

Result: Same impact as HT monitoring on presence rate, but at lower cost—owing to fewer infra-marginal payments.

Lessons from Uganda

Local accountability schemes that harness stakeholder preferences can have powerful effects. These include:

- ▶ Low-cost, informational interventions that address collective action
- ▶ Delegated incentive schemes that recognize monitors' costs and embrace potential incompleteness of information.

The best information for central planning purposes may not be the best information for local management.

IGC Rwanda is currently extending this work in two areas:

- ▶ to help the government with reform of its *imihigo* system of public-sector contracts;
- ▶ and, prospectively, to look at incentives for education quality in that country.

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