

Improving teacher attendance
using a locally managed monitoring scheme
Evidence from Ugandan primary schools

Jacobus Cilliers,^a Ibrahim Kasirye,^b Clare Leaver,^a Pieter
Serneels,^c and Andrew Zeitlin^d

^aUniversity of Oxford; ^bEconomic Policy Research Centre; ^cUniversity of East
Anglia; ^dGeorgetown University

24 September 2013
IGC Annual Meeting

1. Motivation

Teacher absenteeism remains a serious challenge in Uganda, with estimated absence as high as 27 percent (Chaudhury et al. 2006).

Test-based accountability has been successful in other contexts (Muralidharan & Sundararaman 2011) but evidence from East Africa is mixed (Glewwe et al. 2010; Lieberman et al. ongoing).

Scaling-up 'automated' measurement of teacher inputs has proven challenging in the public sector (Banerjee et al. 2007).

This raises the question of whether and how we can empower *local* stakeholders to monitor and incentivize teacher presence.

In this study, we make use of a new, mobile-based platform for the collection of data on teacher presence.

Such local monitoring schemes serve two functions:

1. To change bargaining dynamics locally in order to induce greater inputs;
2. To provide reliable administrative data for allocation of District and Ministry resources.

We assess the efficacy of alternative forms of local monitoring, both as a means to (cost-effectively) increase **teacher presence** and to collect good **quality monitoring reports**.

2. Design

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 US\$ 60,000 if marked present in every qualifying report that month.

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*.

3. Data

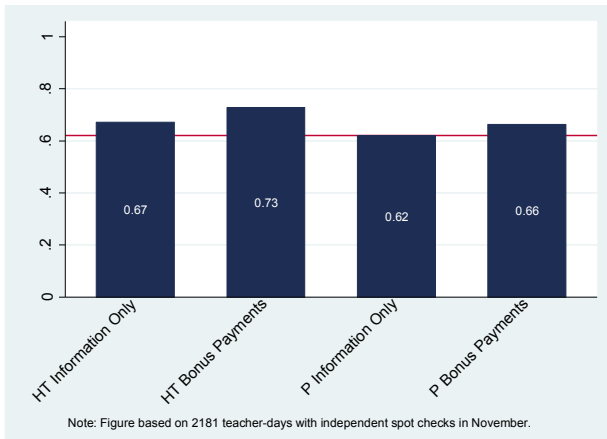
To study performance of these alternative schemes, we combine two data sources:

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 discuss impacts of alternative designs on teacher presence, cost, and quality of reporting in turn.

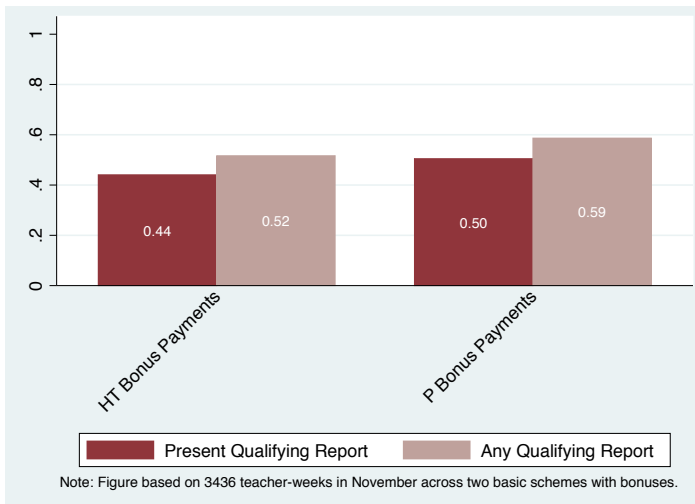
4. Results

Head teacher led monitoring with bonus payment substantially improves teacher presence



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

Head teacher monitoring is no more expensive than parental monitoring



Dark red bars show the proportion of teacher-weeks where teacher

Quality of Reporting

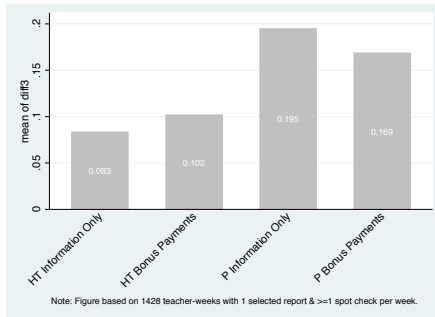
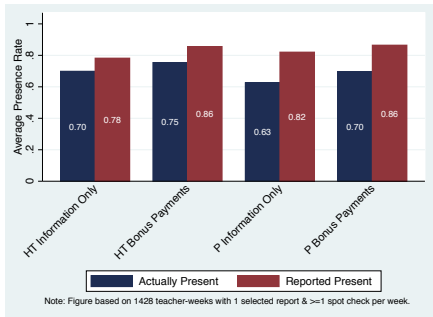
A second objective of local monitoring is to provide an accurate administrative picture of teacher absence to inform the allocation of District and Ministry resources.

In particular, is there a trade-off between incentives (via bonuses) and quality of administrative information?

To address this issue, compare reported and actual presence rates.

- ▶ We confine attention to teacher-weeks in which we also have independent spot checks (on randomly chosen days).
- ▶ Why? Teacher presence varies substantially over the term, and we want to avoid confusing such **seasonality** with **misrepresentation**.

All monitors over-state teacher presence but parents far more so



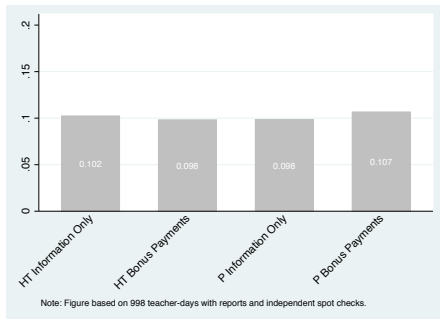
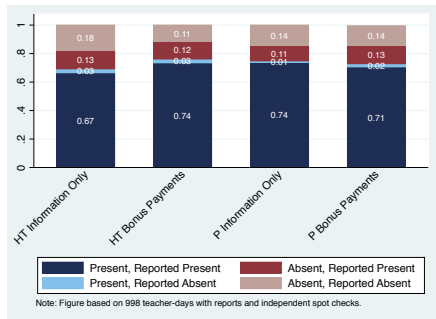
Blue bars show the proportion of teacher-spot-check-days where teacher is actually present. Red bars show the proportion of teacher-reporting-days where teacher is reported present. Grey bars (RHS) show the difference.

Understanding the discrepancy between actual and reported presence rates

The most obvious explanation for this statistical misrepresentation is that monitors **falsely report** absent teachers as present.

Investigate by focusing on teacher-days with both a spot-check and a report by a monitor.

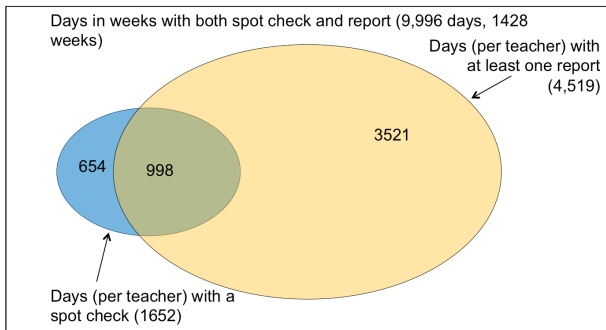
False reporting is considerable but similar across head teachers and parents



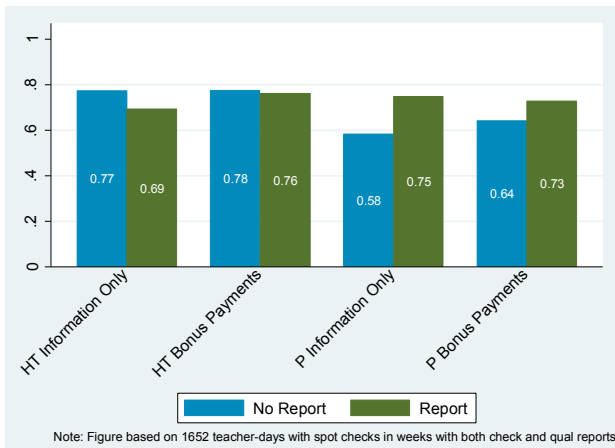
Red regions show the proportion of teacher-days where teacher is falsely reported as present. Grey bars (RHS) show the difference in proportions: reported present less actually present.

Another explanation is that reported presence is based on a **selected sample** of days when teacher presence is high.

Investigate by comparing presence on spot check days with and without a report (green versus blue regions in the figure below).



Parents select reporting days with higher teacher presence



Under the parent led schemes, the actual presence rate is 12 percentage points higher on days when a report is submitted than on days with no report.

5. Directions

Multiple monitors

Results so far do not seem to favour parents as monitors.
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.

Theory:

- ▶ Bonus payments provide a source of transferable utility
⇒ local bargaining can take place.
- ▶ H-scheme: bargaining between head teacher and teacher.
- ▶ But if teacher's attendance cost is high and head teacher's monitoring cost is low, they **collude (false reporting)**
⇒ teacher is absent even though the socially efficient outcome may be for him/her to be present.
- ▶ H&P-scheme: bargaining between HT, teacher *and* parent.
- ▶ Lower probability of a bonus payment.
Less participation in monitoring + internalisation of parent preferences which (also) reduces collusion.
- ▶ Possibly higher probability of teacher presence
Two competing effects, internalisation vs. participation.

Evidence:

- ▶ H&P-scheme and H-scheme are equally effective at incentivising higher teacher presence.
- ▶ But H&P-scheme drastically lowers the cost of the scheme, due to less false reporting and fewer infra marginal payments.

Preliminary results suggest a cost-effective way to improve teacher presence (and generate good quality data) is to make use of *both* head teachers and parents in a locally managed monitoring scheme.

Improving teacher attendance
using a locally managed monitoring scheme
Evidence from Ugandan primary schools

Jacobus Cilliers,^a Ibrahim Kasirye,^b Clare Leaver,^a Pieter
Serneels,^c and Andrew Zeitlin^d

^aUniversity of Oxford; ^bEconomic Policy Research Centre; ^cUniversity of East
Anglia; ^dGeorgetown University





24 September 2013
IGC Annual Meeting

Acknowledgements

This presentation describes work undertaken in partnership with World Vision and the Makerere University School of Computing and Informatics Technology.

We are grateful to DFID, the International Growth Centre, and the World Bank for financial support, and to the IGC for co-organizing this workshop with EPRC.

References I

-  Banerjee, A., Duflo, E. & Glennerster, R. (2007), 'Putting a band-aid on a corpse: incentives for nurses in the Indian public health care system', *Journal of the European Economic Association* **6**, 487–500.
-  Chaudhury, N., Hammer, J., Kremer, M., Muralidharan, K. & Rogers, F. H. (2006), 'Missing in action: Teacher and health worker absence in developing countries', *Journal of Economic Perspectives* **20**(1), 91–116.
-  Glewwe, P., Ilias, N. & Kremer, M. (2010), 'Teacher incentives', *American Economic Journal: Applied Economics* **2**(3), 205–227.
-  Muralidharan, K. & Sundararaman, V. (2011), 'Teacher performance pay: Experimental evidence from India', *Journal of Political Economy* **119**(1), 39–77.