Phone-based Learning Assessments:
Early Data and Lessons

Noam Angrist

World Bank, Oxford, Young 1ove

Related Papers

Practical lessons for phone-based assessments of learning

Noam Angrist,[1,2] Peter Bergman,[3] David K Evans [ID],[4] Susannah Hares,[5] Matthew C H Jukes,[6] Thato Letsomo[2]

ABSTRACT
School closures affecting more than 1.5 billion children are designed to prevent the spread of current public health risks from the COVID-19 pandemic, but they simultaneously introduce new short-term and long-term health risks through lost education. Measuring these effects in real time is critical to inform effective public health responses, and remote phone-based approaches are one of the only viable options with extreme social distancing in place. However, both the health and education literature are sparse on guidance for phone-based assessments. In this article, we draw on our pilot testing of phone-based assessments in Botswana, along with the existing literature on oral testing of reading and mathematics, to propose a series of preliminary practical lessons to guide researchers and service providers as they try phone-based learning assessments. We provide preliminary evidence that phone-based assessments can accurately capture basic numeracy skills. We provide guidance to help teams (1) ensure that children are not put at risk, (2) test the reliability and validity of phone-based measures, (3) use simple instructions and practice items

Summary box

► Assessing children and youth remotely is essential to mitigating the adverse short-term and long-term public health and education impacts of the COVID-19 pandemic, as well as future school closures due to health and other crises.
► There is existing literature on best practice strategies to carry out phone-based surveys of adults, on oral face-to-face testing of learning among children and youth, and on using technology to help community health workers identify ill or at-risk children. However, there is little evidence on assessing learning among children and youth over the phone.
► Pilot experience with phone-based testing among our team, together with experience with oral assessments and phone-based surveys, provides preliminary guidance to orient those who would assess learning for out-of-school children when face-to-face assessments pose a public health risk.

Stemming Learning Loss During the Pandemic: A Rapid Randomized Trial of a Low-Tech Intervention in Botswana

Noam Angrist, Peter Bergman, Caton Brewster, and Moitshepi Matsheng

Abstract

The COVID-19 pandemic has closed schools for over 1.6 billion children, with potentially long-term consequences. This paper provides some of the first experimental evidence on strategies to minimize the fallout of the pandemic on education outcomes. We evaluate two low-technology interventions to substitute schooling during this period: SMS text messages and direct phone calls. We conduct a rapid trial in Botswana to inform real-time policy responses collecting data at four- to six-week intervals. We present results from the first wave. We find early evidence that both interventions result in cost-effective learning gains of 0.16 to 0.29 standard deviations. This translates to a reduction in innumeracy of up to 52 percent. We find increased parental engagement in their child's education and more accurate parent perceptions of their child's learning. In a second wave of the trial, we provide targeted instruction, customizing text messages to the child's learning level using data from the first wave. The low-tech interventions tested have immediate policy relevance and could have long-run implications for the role of technology and parents as substitutes or complements to the traditional education system.

Sample of ASER test used in Botswana

Levelling Tool (Version 5)
Basic Operations

62 + 18	33 + 49	16 + 47

91 − 52	42 − 38	81 − 43

26 × 3	38 × 2	12 × 5

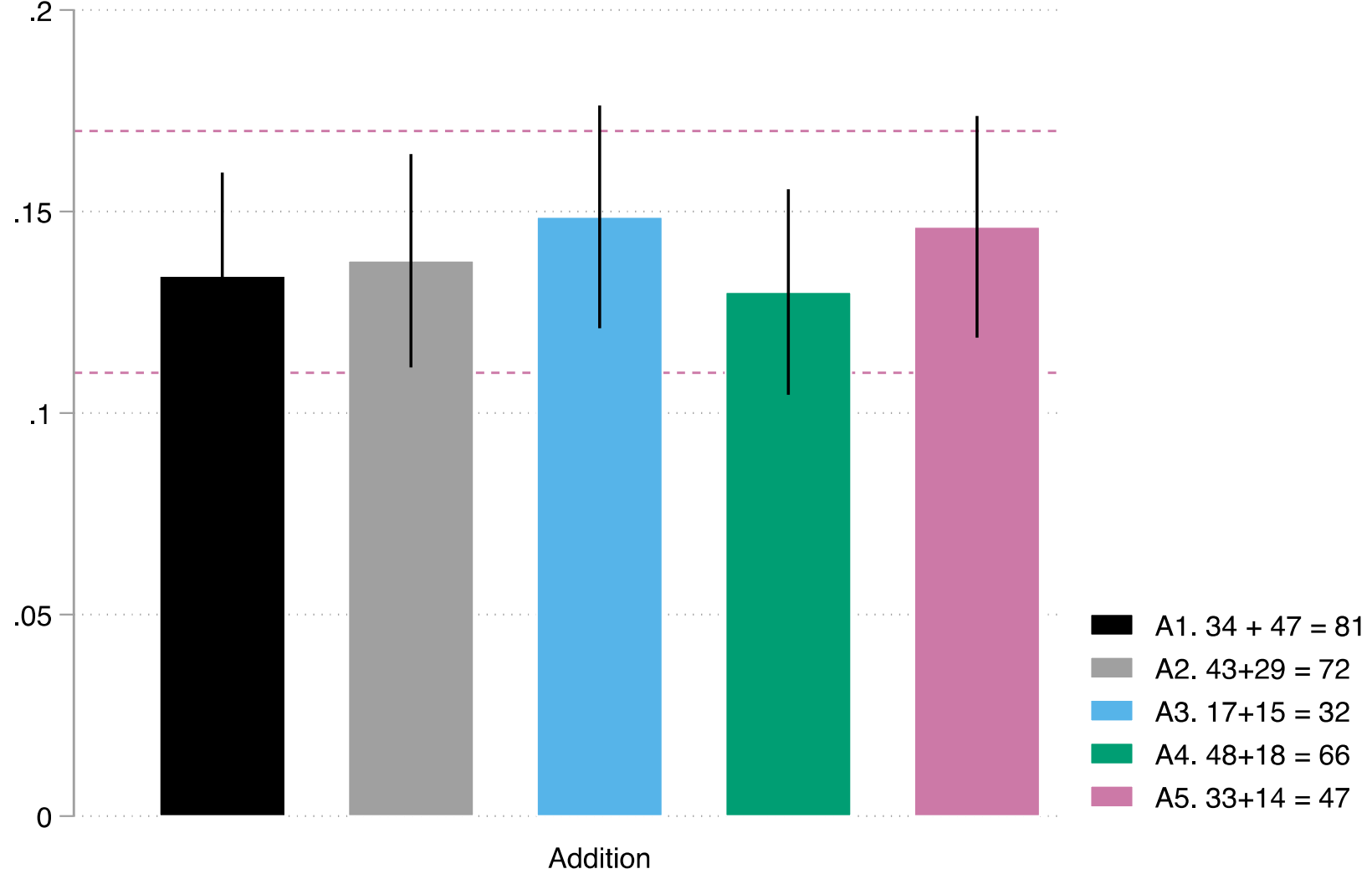|		
6 ⟌ 93	4 ⟌ 53	3 ⟌ 49

Learning Comparison: Phone vs Face-to-Face
Differentiates learning level, similar distributions
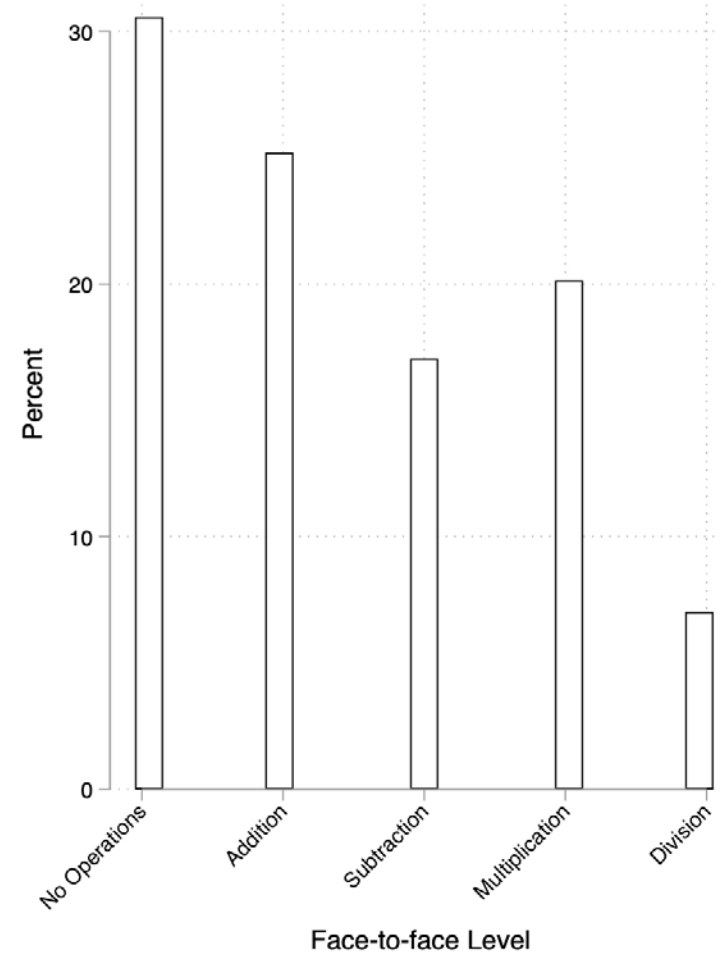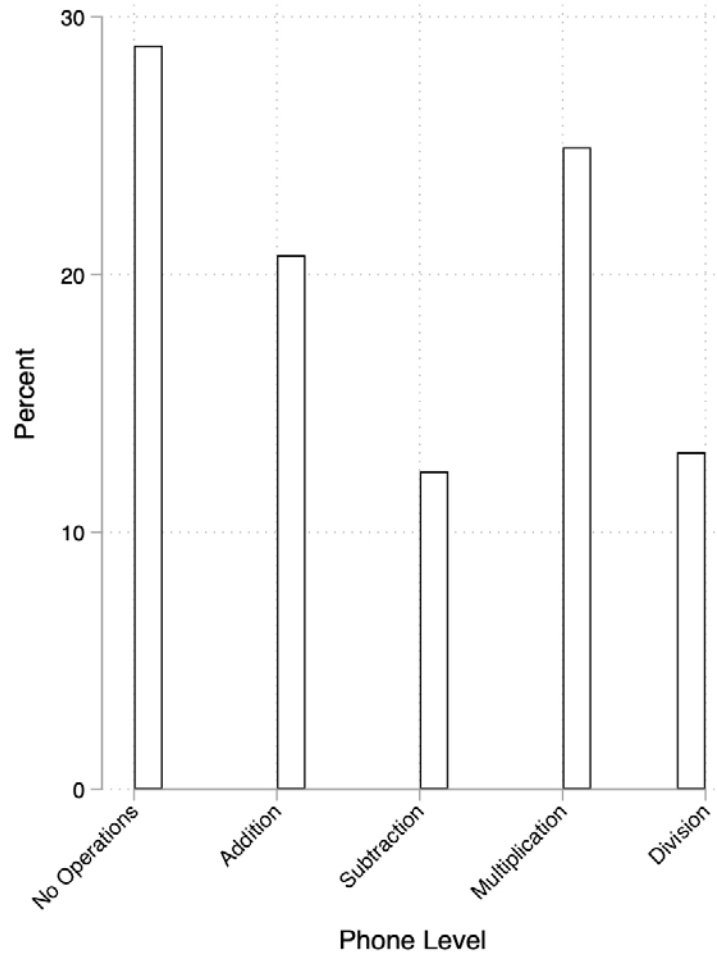
Randomized Questions, Parallel Forms Reliability

No statistical difference in correct response

Legend:
- A1. 34 + 47 = 81
- A2. 43+29 = 72
- A3. 17+15 = 32
- A4. 48+18 = 66
- A5. 33+14 = 47

Addition

Effort vs Cognitive Skill

Can design test to tease out mechanisms
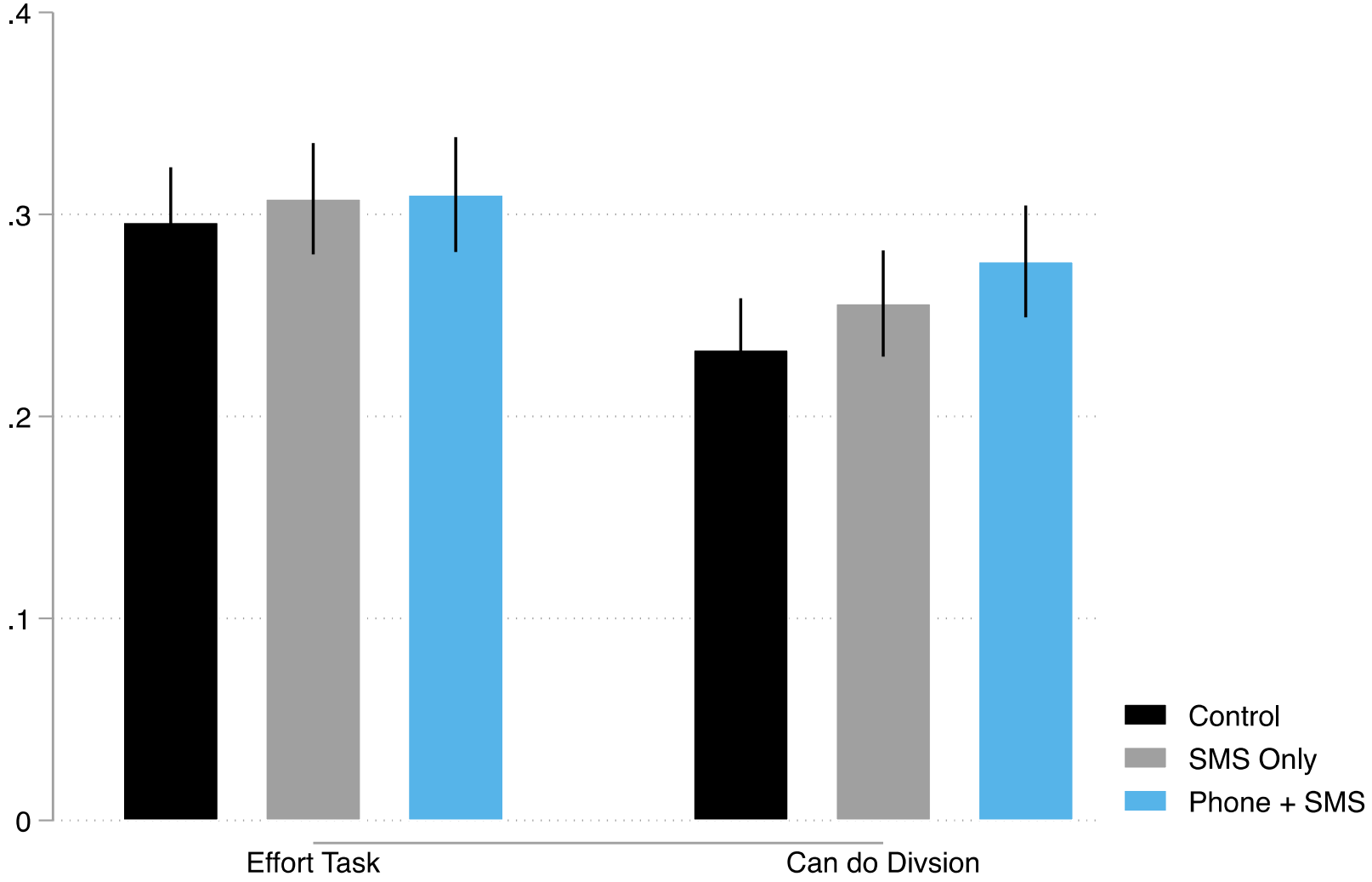
Cost-effectiveness

PIRLS 2011 Botswana

Phone Assessment

$62.5 per child

$4.40 per child

Takeaways and Future Directions

- Phone-based assessments are promising
- Potential to complement existing testing infrastructure for higher frequency, low-stakes diagnostics
- More validation and reliability testing
- Cross-context assessments
- Take-up is a first-order issue
- Protocols as critical as technical validation of learning constructs