Impact Evaluation of MathCloud in Sri Lanka

South Asia Regional Symposium on ICT for Education
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Bilesha Weeraratne, PhD.
Institute of Policy Studies of Sri Lanka.
MC Pilot Project

- 1383 Grade 8 Students
- MathCloud (MC) ran for 7 months - May to Nov. 2014.
- 3 Rounds of testing and surveying of students.
  - Pre test and survey in May 2014
  - Post Test 1 and survey Oct. 2014
  - Post Test 2 and survey Nov. 2014
MC Treatment

Pilot

MC in Sri Lanka

Treatment

Tests
Implementation
Methodology
Results

Bilesha Weeraratne, PhD.
MC Treatment

Control (C) Group

- 674 Students
- 5 days of the week
  - All 5 days regular class room environment with a mathematics teacher
- Faced all 3 tests and surveys
MC Treatment

Control (C) Group
- 674 Students
- 5 days of the week
  - All 5 days regular class room environment with a mathematics teacher
- Faced all 3 tests and surveys

Treatment (T) Group
- 709 Students
- 5 days of the week
  - 2-3 days: computer based instructions by the math teacher using MC in a computer lab
  - 2-3 days: regular class room environment with a mathematics teacher
- Faced all 3 tests and surveys
Testing

- 30 Test items in each test
- Pre Test: both 2\textsuperscript{nd} and 3\textsuperscript{rd} academic syllabus
- Post-Test 1: only 2\textsuperscript{nd} academic content
- Post-Test 2: both 2\textsuperscript{nd} and 3\textsuperscript{rd} academic content
Implementation Experience

- Sampling
  - Planned for randomization but ended up being purposive sampling.

- Duration
  - Planned for 1 year ended up with 7 months.

- During intervention -
  - shared computers, used MC outside their scheduled MC hours.

- Methodology
  - Planned for Difference in difference model - but couldn’t collect all required previous test scores.
Impact Evaluation Methodology

Propensity Score Matching (PSM)

- PSM controls for possible selection bias
- Makes T/C more comparable based on observable char.
- Similarity between subjects is based on estimated treatment probabilities = propensity scores.

3 versions of Test Scores

- Raw scores
- Standardized scores
- Item Response Theory adjusted Scaled Scores
Impact Estimates of Change in Test Scores

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- **Rob 2**: Matching based on students’, teachers’ and school characteristics + Sample restricted to common mathematics teachers for T/C
Takeaway Messages

- MC ↑ scaled scores by approx 3.5 percentage points after Post Test 1
- MC ↑ scaled scores by approx 2 percentage points after Post Test 2
THANK YOU

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