Impact Evaluation of Education Interventions: Methods, experiences and lessons from Kenya and Uganda

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Contents

• Understanding/Importance of IE/Why IE?
• Methods/what is a good IE? rigour?
• Case study of RtL – Reading to Learn intervention
What is/is not impact? ......(1)

Factors outside the program
Eg. policy, ongoing or new interventions

INPUTS
- Resources (human & financial)
- Intervention
- Logistics
- Materials

PROCESSES
- Training at school & MoE
- Equipping schools with materials

OUTPUTS
- Number of students, teachers & MoE staff reached
- # of materials developed

OUTCOMES
- High reading scores
- Change of attitude
- Improved teaching practice

IMPACTS
- Critical thinking
- Independent learning
- Improved wellbeing

Monitoring
Mid Term Evaluation

Program Beneficiary Population

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Program Beneficiary Population
Understanding IE .... (3)

• The worker bee – in real life, how can we assess its impact to the colony? – use its performance?
Understanding IE......(2)

Can we attribute the change to the intervention?
Which ones are IE questions? ..(3)

- Are reading text books reaching the learners?
- Does teacher training improve students’ reading skills?
- How many literacy teachers were trained by the program?
- How much does it cost to improve early grade reading skills by 0.5 s.d.?
Importance of IE ..... (1)

• Why bother with impact....?

1. What works – benefits of reading
2. Evidence based decisions
3. Improve program or policy uptake
4. Costs and sustainability
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Methods/what is a good IE?

• The evaluation problem?

How can we attribute the CAUSE to the program?
Approaches to IE

• You need a counterfactual. What’s that?!
• No perfect counterfactual – what do you do?
  – Case-matching
  – Regression discontinuity (RD)
  – Difference in Difference (DID)
• ‘Counterfeit’ counterfactual – Before and after? – not impact evaluation
• Limitations – selection bias, non-participants, contamination, history effects, maturation
Before and After

• Assume you have data on treatment schools before intervention and after intervention

• Estimate “impact” of intervention on student reading skills by:
  • Compare student mean scores in reading before the intervention to mean scores after the intervention
  • Difference in reading mean scores between the two periods is “treatment”.

• This is a ‘counterfeit’ counterfactual – avoid it!!
Randomization – good counterfactual

Random selection [external validity]

Population

Sample

Random assignment [internal validity]

Treatment

Comparison
How do you solve the evaluation problem?

- Counterfactual: What would have happened in the absence of the intervention

\[
\text{Impact} = Y_1 - Y_1^* 
\]
Counterfactual ......

- Randomized selection and assignment
- Need for ‘identical’ treated and comparison group
- Knowing baseline characteristics is important but not a must for IE.
No counterfactual – what can you do?

- Case-matching
- Regression discontinuity (RD)
- Difference in Difference (DID)
Case matching

Making treated and comparison group the same

– Project schools already known
– Find other schools that are “as similar as possible”
– Advantage: Need not be done in advance, need not (but can) use a baseline
– Pitfall: not always possible; if project schools are the 400 worst in the country then there is no match; or if they were originally chosen with some fairly un-matchable criterion (schools the NGO implementer already knew).
No counterfactual – what can you do?

- Case-matching
- Regression discontinuity (RD)
- Difference in Difference (DID)
Regression discontinuity (RD) ....(1)
Regression discontinuity (RD) ...(2)
No counterfactual – what can you do?

• Case-matching
• Regression discontinuity (RD)
• Difference in Difference (DID)
Difference in difference (DID)

Impact (DID) = \( (Y_3 - Y_1) - (Y_2 - Y_0) \)
Presentation

• Understanding/Importance of IE/Why IE?
• Methods/what is a good IE? rigour?
• Case study of RtL – Reading to Learn intervention
Reading to Learn Intervention (RtL) …..

**Intervention**

- **Teacher Preparedness & Practice**
  - Pedagogy
  - Class management
  - Classroom interaction (1-3)

- **School Leadership**
  - Head teachers
  - School management

- **Classroom Learning Environment**
  - Availability/Use of Materials
  - Class Library

**CORE MODEL IN ALL TREATMENT SCHOOLS**

**CORE MODULE PLUS IN HALF OF THE SCHOOLS**

- **Parental Involvement and Support**
  - Support to school attendance
  - Mini libraries
  - Storytelling and reading at home
  - Support improved performance

**Outcome**

- **Literacy**
- **Numeracy**

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Pedagogy: Steps of Reading to Learn

1. Preparing before reading
2. Reading the story
3. Sentence making
4. Spelling/Phonics
5. Writing
Key Research Questions

- Are children in lower primary grades (1, 2 and 3) able to read and do maths more proficiently?

- Are there differences in literacy and numeracy proficiency for children exposed to parental involvement Vs no parental inv.?

- What are the key contributing factors to these changes?
  - Is RtL intervention Cost-effective?
Key findings

• RtL had a statistically significant impact on literacy in Uganda; 18-34% of a s.d.
• 40% increase in pupils scoring above 50%; 32% in Comparison group.
• Inadequate learning inputs and inadequate literacy teaching strategies in the pre-program era may explain this impact.
• Implementation approaches may also explain the results – different uptake levels across schools.
What did we learn ......?

• Partnerships & participation
• Experimental Vs quasi experimental design
• Implementation design & feed back
• Context and policy environment
• Duration of exposure
• Cost data and cost-effectiveness
• Managing relationships/expectations