Motivating teachers to improve early grade learning
Cash on Delivery: Motivating teachers to improve early grade learning

Part I | What’s the problem?
Too little learning is happening in early grades

Math: Grade 2 multiplication (Uwezo, 2013)
Examples: 7x4, 11x2

Share mastering skill (%)
Teacher motivation is low

Where is my teacher?

- Absent from school: 27% (2016) vs. 32% (2015)
- At school, out of class: 19% (2016) vs. 33% (2015)
- In class: 54% (2016) vs. 35% (2015)

(Data from KiuFunza surprise visits, 2016)
Cost: Teaching, Absence and Motivation

- Annual primary school wage bill: TZS 1,724 billions
- Loss due to classroom absence (46%): TZS 793 billions
- Cost of COD (high estimate): TZS 138 billions

Sources: BEST data; KiuFunza surveys and implementation data.
Government faces the triple challenge of:

- Improving learning in schools
  Learning is too slow

- Spending the education budget more effectively
  Growing school populations and budget requirements

- Ensuring teachers are motivated
  They are the key actors
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Part 2 | What can we do?
Cash on Delivery addresses the three challenges

- Cash on Delivery (COD) is an incentive system that links teachers bonus payments to the skills learned by the children they teach.
- It communicates to all teachers that learning is valuable and that learning progress is rewarded.
- Cash on Delivery
  - Improves learning (impact evidence KiuFunza)
  - Reduces cost per passer
  - Is appreciated by teachers
Cash on Delivery improves learning outcomes

- Yes! The CG-COD combination treatment: 20% increase in the pass rates for both Kiswahili and Math
  - Incentives improve effectiveness of input financing
The power of KiuFunza incentives
### Teacher incentives work in other countries

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>KEY FEATURES</th>
<th>IMPACT (SD)</th>
<th>IMPACT compared with rural-urban test score difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tanzania</td>
<td>140 COD schools</td>
<td>+0.18</td>
<td>21%</td>
</tr>
<tr>
<td>Brasil (Pernambuco)</td>
<td>950 schools; prim &amp; sec</td>
<td>+0.12</td>
<td>14%</td>
</tr>
<tr>
<td>Chile</td>
<td>All 6,500 basic education schools</td>
<td>+0.16 to +0.25</td>
<td>19—30%</td>
</tr>
<tr>
<td>Kenya (Experiment)</td>
<td>50 Schools, primary</td>
<td>+0.14</td>
<td>17%</td>
</tr>
<tr>
<td>India (Experiment)</td>
<td>Group incentive Individual incentive</td>
<td>+0.16</td>
<td>19%</td>
</tr>
<tr>
<td></td>
<td>100 schools total</td>
<td>+0.27</td>
<td>32%</td>
</tr>
</tbody>
</table>
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Part 3 | Why is it worth doing?
Value for money

- Large skill impact (pass rates +20%)
- Cost low relative to existing budget
- Excludes CG (now sent directly)
- Government intervention:
  - School visits cheaper
  - Testing data NECTA

KiuFunza 2013-14 intervention costs

- % of Business as Usual Budget

- Communication costs, school visits: 1.8%
- COD cost St I-III (bonus): 2.4%
- Student testing costs: 3%
Teachers like incentive pay

“What is your opinion about paying teachers a bonus based on student performance improvement?”

- 75% have a very favorable opinion
- 20% somewhat favorable
- 4% neutral
- 1% somewhat unfavorable
- 0% very unfavorable

75% have a very favorable opinion, 20% somewhat favorable
Performance incentives are not new in Tanzania

- School Incentive Grant (SIG) in 2014
  - Based on learning improvements
  - SIG bonus paid to school
  - Only small number of schools can win

- KiuFunza’s design
  - a) all teachers can earn, more students benefit
  - b) the bonus is paid to teachers directly
  - c) the bonus represents a significant value (e.g., 1 month salary)
  - d) the incentive is communicated clearly
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Part 4 | How do we do it?
**Must-haves to start a Cash on Delivery scale pilot**

- Ministerial **commitment** and a **COD fund** to pay the incentives
- Agreement on incentive **design** and performance measure
- Clear and engaging **communication** to teachers
  - at the start of the year to ensure the incentive offer is known and understood
  - after the payments are sent to provide feedback
- Access to teacher and test **data**
- Efficient structure to manage incentive implementation
Execution: How to implement Cash on Delivery?

1. Start of school year
   - Quality communication: incentive offer, FAQ flyer
   - Organize COD teacher database: teacher assignment and bank account data

2. End of school year
   - Student test data and audits
   - Create pay sheets
   - Pay bonuses
Key Cash on Delivery design decisions (1)

- ‘What’: the target indicator that is measured and paid for
- Value added learning: the difference between what a student can do before and after a year of schooling
  - Measure: increase in pass rate
  - Risk: weak students excluded to boost pass rate
  - Solution: combined score-flow measure (penalizes exclusion)
    - Brasil uses this as key education indicator and target at all levels (IDEB)
- Equity of opportunity: pay for progress towards school specific target
‘Who’: whose performance is measured, individual teachers or groups of teachers?

National exam data: performance of teams
- Standard IV national assessment: measures performance of teachers in Standard I-IV
- PSLE: measures performance of teachers in Standard V-VII

Standards:
- Early grades only: I-IV
**Key Cash on Delivery design decisions (3)**

- **Size** of expected bonus
  - Not too small
  - Cost example: if max bonus is one month of basic salary then we need a COD fund of 8% (1/12) of annual personnel expense in incentivized grades (I-IV)

- **Schools**: all schools or a sub-set of schools
  - e.g. lowest ranked schools; or rural schools
  - Equity
  - Focus puts budget at acceptable level
Equity: Cash on Delivery can reduce learning inequality

- **Equity of opportunity:** pay for progress towards **school specific target**
  - Targets are based on past school performance
  - A poorly performing school gets a target just above past performance
  - Minister decides how ambitious target is each year

- **Focus** on most disadvantaged schools
  - Will reduce learning gap with high performers
  - Help to attract teachers to these schools
  - Can reduce budget requirement
Summary

- Too little learning is happening in early grades, partly because,
- Teacher motivation is low

- Cash-on-Delivery improves teacher motivation
- Cash-on-Delivery improves learning outcomes
- Performance incentives are not new in Tanzania
- Teachers like performance-based pay

- Cash-on-Delivery concept is ready for Government to pilot it
- A teacher incentive policy is a big investment; we should try it and test impact before full adoption
KiuFunza team

- Tanzania team
  - Twaweza
  - COSTECH
  - TAMISEMI
  - District Implementing Partners
  - District Offices
  - EDI (Bukoba, implementation management)

- Global team
  - Principal Investigators
    - Isaac Mbiti, University of Virginia
    - Karthik Muralidharan, UC San Diego
  - Innovations for Poverty Action (survey management)
Ahsanteni sana