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National Early Grade Literacy and Numeracy Intervention Pilot

Performance Monitoring

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Overview

- 2012 National Survey (baseline)
  – EGRA and EGMA
- Intervention
- 2014 Survey (endline)
  – Findings
- Implementation variables
- Performance monitoring
- Lessons learned

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**2012 National Survey (Baseline)**

2012 Findings - Reading

- Reader
  Reading comprehension of at least 80% (category 3)
- Emergent reader
  ORF greater than 0 cwpm and reading comprehension greater than 0 but less than 80% (category 2)
- Non-reader/Beginning reader
  ORF greater than or equal to 0 cwpm and reading comprehension equal to 0% (category 1)

Reading

- cat 1: 34.3%
- cat 2: 48.6%
- cat 3: 17.1%
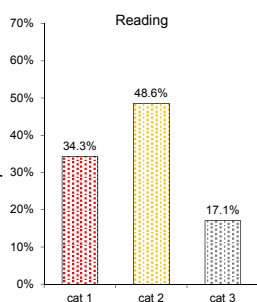
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2012 Findings - Mathematics

- Mathematician
  Missing number and addition and subtraction level 2 both above 80% (category 3)
- Emergent mathematician
  Missing number and addition and subtraction level 2 both above 30% (category 2)
- Non-mathematician/Early mathematician
  Either missing number and/or addition and subtraction level 2 below 30% (category 1)

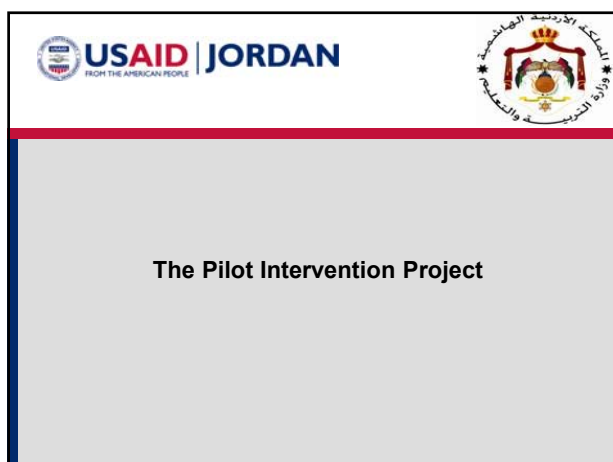Mathematics

- cat 1: 40.2%
- cat 2: 48.6%
- cat 3: 11.1%
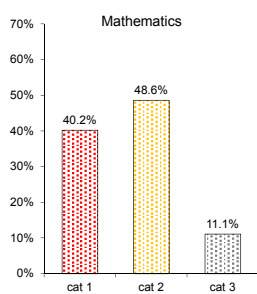
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Findings – Reading and Mathematics

- The majority of students were not reading with fluency and lacked strength in the foundational literacy skills normally taught in grade 1.
- Although students were quite comfortable with some of the more procedural mathematics skills, their conceptual understanding needed to be strengthened.

- Students were not getting sufficient instruction in foundational reading and mathematics skills—in foundational skills that research indicates are predictive of future success in reading and mathematics—with little hope of having this insufficiency addressed by their teachers or the curriculum

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The Pilot Intervention Project

Intervention – Description

- To develop a program that would support teachers in providing deliberate, structured, and developmentally appropriate daily practice in foundational skills for reading and mathematics.

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Mathematics
- Count
- Manipulate numbers
- Solve problems

Reading
- Letter sounds
- Phonemic awareness
- Writing

- Vocabulary
- Comprehension
- Writing

Intervention – Description

- The teacher's guide (teacher notes) for each subject was developed to provide teachers both with a pedagogical rationale for the teaching approach of the intervention and with guidance for how to conduct the activities associated with the different skills.

Intervention – Description

- A set of daily lesson notes were developed for each grade. On each page, the skills to be included in the 15-minute routine are listed, as well as the activities to be used for each skill. Furthermore, details are provided for each activity with the letters or words, numbers, and problems, etc. to be used during the activity listed.

Intervention – Description

- Student workbooks for each subject and grade were developed. The workbooks engaged students in independent practice of the skills that the teacher had worked on with the class during the 15 minutes at the start of the lesson.

Intervention – Description

- 12 Districts
- 20 Supervisors
- 45 Schools
- 347 Teachers
- 12,000 Students
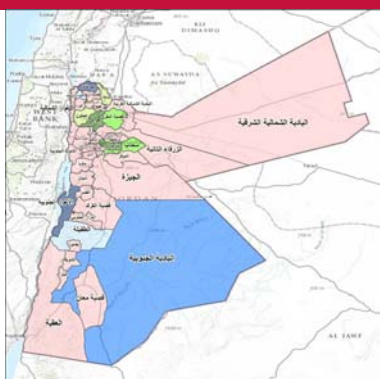
Intervention – Description

- Does daily practice of foundational skills through deliberate, structured, and developmentally appropriate activities support children to be able to read with comprehension and do mathematics with understanding?
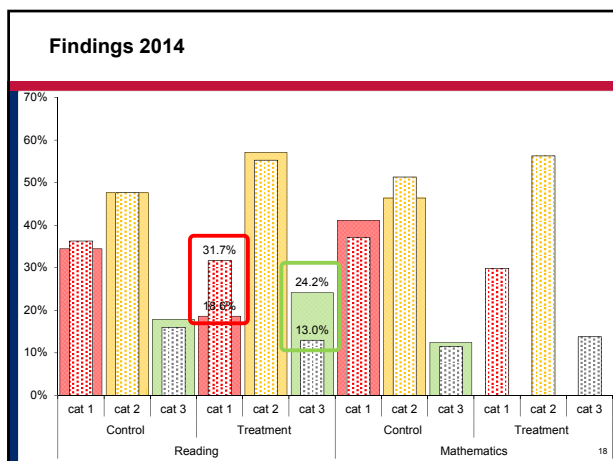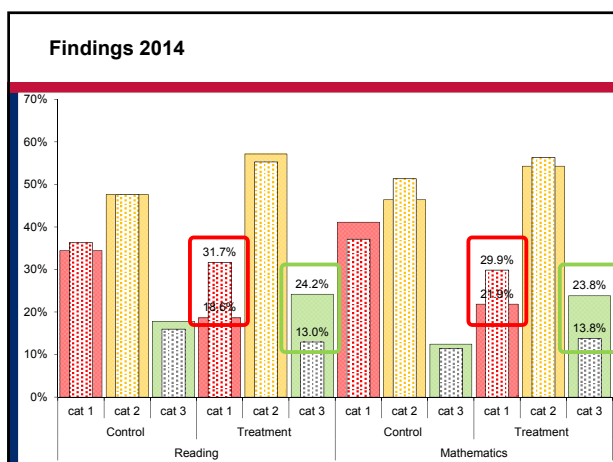- What are the conditions that help teachers to implement the daily routine and the associated activities with fidelity and confidence?

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2014 National Survey (Endline)

Findings 2014

Findings 2014

Findings 2014
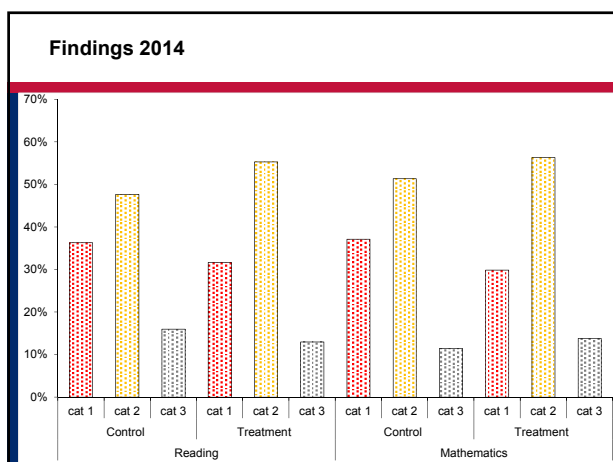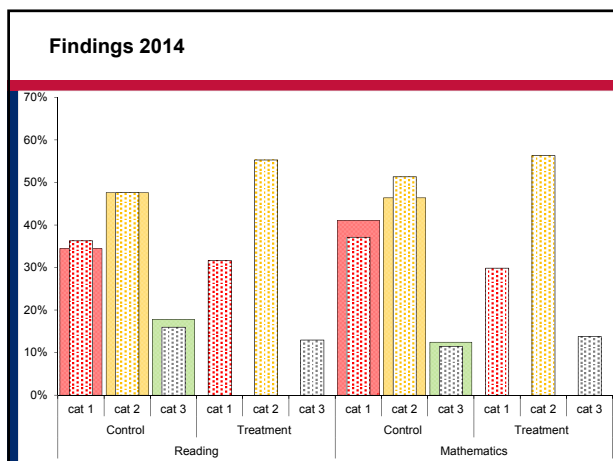
Findings 2014

Findings 2014

The intervention did exactly what it was intended to do:

While there were virtually no gains in control schools from 2012 to 2014, there were significant gains across treatment schools in terms of reducing the proportion of the lowest performers and increasing the proportion of the highest performers.

These results are extremely promising, particularly because the intervention was implemented for only one school year.

One of the districts in the South was among the top four performing intervention districts, both for reading and for mathematics, demonstrating that the intervention was also successful here.

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Implementation Variables

Implementation variables

- Factors that are associated with the top performing classrooms and districts.
    - Frequent supervisor visits
        - 93% of teachers with frequent supervisor visits were in top performing classrooms
    - Teacher use of the intervention materials
        - 69% of the teachers who followed the lesson notes and routines were in the top performing classrooms
    - Marking of student workbooks by teachers
        - 84% of teachers who marked all of the work in the student workbooks were in the top performing classrooms. None of the teachers who marked less than half or none of the work in the workbooks were in the top performing classrooms
    - Teachers following the participatory pedagogy of the intervention
        - 80% of teachers who monitored student understanding by asking for explanations were in the top performing classrooms. None of the teachers who asked no questions were in the top performing classrooms[22]

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Performance Monitoring

Classroom visit observation tool

Classroom visit observation tool

Capturing the data

Step 1: Complete report

Step 2: Submit report by SMS

Step 3: SMS rerouted using Pomegranate software to Google Docs

Data is captured in a Google.docs spreadsheet

Data is transferred and cleaned

Data is summarised and analyzed

Possible uses of data

- Identifying supervisor visit frequency patterns for action:
  - Supervisors not visiting as frequently as expected
  - Schools and teachers not being visited as frequently as they should be
- Identify teachers in need of additional visits or support:
  - Teachers who are not on the expected page (i.e. not implementating with fidelity)
  - Teachers who are not marking the student workbooks
  - Teachers who are not using the pedagogical approaches of the project

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Lessons learned

Lessons Learned

- Data was less clean than we expected it to be and it involved a great deal of manual cleaning
    - Possible solution: Using USSD (Unstructured Supplementary Service Data)
        - USSD is a Global System for Mobile(GSM) communication technology that is used to send text between a mobile phone and an application program in the network

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Lessons Learned

- Data was less clean than we expected it to be and it involved a great deal of manual cleaning
    - Possible solution: Using USSD (Unstructured Supplementary Service Data)

User types *121*RAMP# and sends

First screen appears

Welcome to RAMP cell service.

Please enter your user number:

SEND

User enters user number and sends

Next screen appears

What would you like to do?
1) Report test data
2) Report visit data

SEND

User enters response and sends

Next screen appears

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Lessons Learned

- Data took longer to process than we expected and hence did not actually serve the purpose that it could have as fully as we may have liked
  – Possible solutions:
    1. Collect less data – easier to filter and analyse
    2. Develop automated data mining procedures to "automate" the analysis and report production (dashboards)

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Lessons Learned

- Everybody has a cellular telephone, so using this technology to collect data is fast, cost-effective and dynamic.

- USSD technology would also allow for customized responses based on the inputs of the user.

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