Evaluation of Government of Haryana’s Comprehensive and Continuous Evaluation Scheme and Learning Enhancement Program

Preliminary Results, July 2013

The Issue:

Enrolment rates at the primary level in India are well over 95%. Under the Right to Education (RTE) Act (2009), every child up to the age of fourteen is guaranteed free and compulsory education, and no child can be held back, expelled, or required to pass a board examination until the completion of elementary education. However, the vast majority of Indian students have not attained standard/grade-level competencies at the end of five years of primary schooling. Recent national-level educational surveys show that only 47 percent of students in standard 5 can read standard 2 level texts proficiently, while only about 25 percent of standard 5 students are able to solve questions involving division, a standard 4 level competency.1 As students progress through school, those who lag behind in early standards continue to fall further and further behind. Many still do not possess even basic competencies at the end of 8 years of elementary education: only 76 percent of standard 8 students can read a standard 2 level text, while only 48 percent can complete mathematical operations at a standard 4 level. Falling further behind is inevitable if focused action is not taken to help these children to “catch up.” In addition, teachers typically prioritize completing the prescribed standard-level syllabus each year, leading them to teach to the “top of the class” only. One of India’s most important developmental challenges is raising basic learning outcomes in early standards to provide a foundation for continued learning as children progress through school.

Two programs to address this challenge:

This note reports on the preliminary results from two programs initiated by the Government of Haryana and evaluated by J-PAL2: Continuous and Comprehensive Evaluation (CCE) and the Learning Enhancement Program (LEP).

I. Continuous and Comprehensive Evaluation (CCE): The RTE has eliminated terminal, high-stakes standardized exams and replaced them with regular low-stakes assessments of student achievement. The Continuous and Comprehensive Evaluation scheme is intended to provide teachers and students with broad-based and frequent feedback on performance to allow teachers to customize their teaching based on the current learning levels of individual students. To this end, CCE employs a more “comprehensive” assessment of student achievement than traditional testing, in that it assigns scores on the basis not of only scholastic performance, but also co-scholastic activities (such as arts, music, or athletics) and personality development as reflected in life skills, attitudes, and values. While many educationalists in India believe the introduction of CCE would impact students positively,3 there has been no systematic examination of such a system to support this hypothesis.

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2. The Jameel Poverty Action Lab (J-PAL), set up in 2003 as a research center at the Economics Department at MIT (USA), is a network of researchers who conduct randomized evaluations to test and improve the effectiveness of programs and policies aimed at reducing poverty. J-PAL’s mission is to reduce poverty by ensuring that policy is based on scientific evidence, and research is translated into action.
In the Government of Haryana’s CCE pedagogy, teachers are given rubrics and given training on how to evaluate students along several academic and non-academic dimensions. Evaluation is conducted frequently in order to provide continuous feedback to teachers and students. In 2011, government teachers in Haryana across standards 1-8 were given training on the CCE program’s pedagogy and practices, and materials to implement the program such as manuals, evaluation sheets, and report cards were provided to schools. Field-level school monitors were given training to provide academic support to teachers and monitor the implementation of the program. The design of CCE in Haryana is based on standard-level competencies, and the training was administered to school teachers by two education training companies partnering with State Council for Education Training and Research (SCERT), Haryana.

II. Learning Enhancement Program (LEP) (Teaching at the right level): The Learning Enhancement Program (LEP) that was implemented in Haryana was designed by Pratham, India’s largest education NGO. This particular model is based on the idea of “teaching at the right level.” It provides tools and space within the organization of the school day to enable teachers to focus their teaching at each child’s competency level. The pedagogy focuses on children in standards 3, 4, and 5 who have not reached a standard 2 level in reading or arithmetic. In the Pratham pedagogy, children are assessed using a simple tool, then grouped according to level rather than standard. Each group is taught starting from its current competency level, and level-appropriate learning activities and materials are used. Throughout the entire process, children’s progress is assessed through ongoing simple measurement of children’s ability to read, write, and comprehend and do basic arithmetic.

This “teaching at the right level” methodology has been proven successful when implemented by Pratham staff or Pratham-recruited volunteers. A recent evaluation in Bihar also found significant improvements in reading and math when the methodology was implemented by government school teachers during the summer holidays. However, before the implementation of this curriculum in Haryana, there was no rigorous evidence that it could be successfully integrated into the formal schooling system during the school day and implemented entirely by government teachers.

In July 2012, the Government of Haryana’s education department introduced this intervention for standards 3 to 5, aimed at improving students’ basic reading skills in Hindi. (In the 2012-13 school year, mathematics was not included in the LEP program.) Teachers in schools were asked to group children across standards 3 to 5 based on their level of reading and to provide instruction at their level according to this methodology for 1 hour a day within school hours. This was made possible by the fact that an extra hour a day was added to all schools in Haryana (in other schools, the extra hour was used for regular activities). The training on the pedagogy was provided by Pratham staff, both for teachers and for a government-led cadre of support and supervision staff. Materials developed by Pratham were used during the special hour throughout the year.

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4 Banerjee, Abhijit V., Rukmini Banerji, Esther Duflo, Michael Walton, 2011, “Effective pedagogies and a resistant education system: experimental evidence on interventions to improve basic skills in rural India” (working paper).

5 Ibid.
The Evaluation of CCE and LEP:

The Government of Haryana partnered with the Abdul Latif Jameel Poverty Action Lab (J-PAL) to conduct a rigorous randomized impact evaluation of both CCE and LEP on student achievement in two districts, Mahendragarh and Kurukshetra. Four hundred primary schools across these two districts were assigned at random receive one of the following treatments:

- Group 1 schools (100 schools) received CCE only
- Group 2 schools (100 schools) received LEP only
- Group 3 schools (100 schools) received both programs (CCE and LEP) simultaneously
- Group 4 schools (100 schools) received neither program (the “comparison” or “control” group)

Approximately 12,500 students in standards 1-4 from schools in all four treatment groups were tested twice, once at the end of the 2011-2012 school year (“baseline” testing) and once at the end of the 2012-2013 school year (“endline” testing). Students were tested on their abilities in basic Hindi reading and basic math using both the ASER reading test and written assessments.

Baseline Test scores

Oral Tests
The ASER Hindi oral assessment tool categorizes students according to the highest reading competency achieved. Students categorized as “Beginner” are unable to recognize letters, categorization as “Letter” indicates that students are able only to identify letters, “Word” indicates the ability to recognize words, while “Standard 1 text” and “Standard 2 text” indicate an ability to read texts at a paragraph level (standard 1 level text) and a story level (standard 2 level text), respectively.

The ASER math oral assessment tool categorizes students according to the highest mathematical competency achieved. Students categorized as “Beginner” are unable to recognize single-digit numbers, categorization as “Single Digit Number recognition” implies that students are able to identify numbers ranging from 0-9, “Double Digit Number recognition” indicates an ability to recognize numbers ranging from 10-99, “Subtraction with carryover (Standard 2 level)” indicates that students can correctly subtract numbers with carry-over (which is identified as a Standard 2 level competency), and “Division (Standard 4 level)” indicates an ability to divide numbers at the described level.

| Table 1: Baseline Distribution of Hindi Reading Competencies |
|---|---|
| Hindi Competency | Percent of students |
| Cannot identify letters | 26.7 |
| Can identify letters | 30.6 |
| Can identify words | 12.8 |
| Can read Standard 1 level text | 13.8 |
| Can read Standard 2 level text | 16.1 |

| Table 2: Baseline Distribution of Math Competencies |
|---|---|
| Math Competency | Percent of students |
| Cannot identify single-digit numbers | 10.7 |
| Can identify single-digit numbers | 46.1 |
| Can identify double-digit numbers | 25.4 |
| Can perform subtraction with carry-over | 11.5 |
| Can perform division | 6.5 |
Written Tests
Both the Hindi and Math written tests used in the evaluation were developed by J-PAL for its “Read India” evaluation. The Read India Hindi test (scored out of 12.5 possible points) includes questions that evaluate reading vocabulary, word and sentence construction, and sentence and passage comprehension. The Read India Math test (also scored out of 12.5 possible points) includes questions that evaluate number counting, addition, subtraction, multiplication, division, and problem solving skills.

Table 3: Baseline Summary Statistics for Read India (Written) Tests

<table>
<thead>
<tr>
<th>Test</th>
<th>Hindi (out of 12.5)</th>
<th>Math (out of 12.5)</th>
<th>Composite (Hindi + Math, out of 25)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean score</td>
<td>4.041</td>
<td>5.005</td>
<td>9.047</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>2.629</td>
<td>3.373</td>
<td>5.742</td>
</tr>
</tbody>
</table>

Preliminary Results: The evaluation assessed impact by comparing learning outcomes for the different intervention groups with the control group. The following preliminary results are based on both oral and written test results.

CCE:
- Students in CCE schools did not perform significantly better at endline than students in control schools on either oral or written tests. In other words, students in CCE schools showed no additional advancement beyond that of students in control schools in either reading or math levels between baseline and endline testing.
- There is thus no evidence that the CCE program in Kurukshetra and Mahendragarh had any impact on student achievement in reading or mathematics.

LEP:
- The LEP program had a large, positive, and statistically significant effect on students’ basic reading abilities:
  - On average, at the endline, students in schools where LEP was implemented scored 0.15 standard deviations higher on oral tests of basic Hindi reading ability and 0.135 standard deviations higher on written tests of basic Hindi than students in control schools. The evidence is consistent with results from other J-PAL evaluations of similar programs using the “teaching at the right level” methodology.6
  - Students in LEP schools showed greater advancement in reading competencies than students in control schools over the course of the study, moving up 0.9 levels on the oral test on average between baseline and endline (versus 0.7 levels in the control group). The effect was strongest for students who were able to identify letters and words at baseline (see Fig. 1 below).

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*Banerjee et al. (2011)
Students in LEP schools did not perform any better than students in control schools on oral or written tests of basic math skills. Given that mathematics was not explicitly included in LEP in the 2012-13 school year, this indicates that the program had no spill-overs from reading to math. These results suggest that it would be important to explicitly cover both reading and math components to ensure that gains in student achievement are not restricted to reading alone.

Interpretation: We offer the following preliminary interpretations for these results:

- The Learning Enhancement Program demonstrates that government teachers can improve learning outcomes through changes in teaching practices. In LEP, achievable learning goals were clearly defined and the training focused on making sure they were understood by teachers, and children were grouped by level rather than by standard so that children could be taught from the level at which they were. A major component of LEP training sessions included classroom practice. Additionally, LEP included sound monitoring and mentoring support for teachers, along with frequent review and a refresher training.7

- The CCE scheme in its current form needs a thorough review in design and appropriateness, as well as in teacher training and implementation. Regular evaluation of pupils is essential to teaching, but the complexity of CCE’s evaluation tools and the lack of a clear connection between such evaluations and specific changes in teaching practices appear to have limited the usefulness of CCE as it was implemented. It is conceivable that if CCE focuses on basic and foundational skills rather than on standard-level competencies it may be more effective.

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7The mentoring and monitoring support for teachers was provided by the Assistant Block Resource Coordinators (ABRCs), a government cadre at the cluster level who were trained in both CCE and LEP to provide this guidance through school visits. On average, in 2012-13, the Government of Haryana had one ABRC for a group of 10 to 15 schools. After their initial training by Pratham, the ABRCs practiced the teaching-learning techniques themselves in a school for 15 days. ABRCs also helped to train teachers in the schools for which they were responsible. A group of Pratham staff also provided monitoring and mentoring inputs to teachers in LEP schools.