Study on access, transition and learning in secondary education

Main findings from a two-block study in Hardoi (Uttar Pradesh) and Sambalpur (Odisha)

New Delhi
25 January, 2018
Objectives

- To understand:
  1. Patterns in school provisioning, particularly at elementary and post-elementary stage
  2. Student learning outcomes at the end of elementary school (Std VIII)
  3. Transition into secondary school
  4. Student learning at the beginning of secondary school (Std IX)

- Study designed as a block-level census in two rural blocks each of Hardoi district, Uttar Pradesh and Sambalpur district, Odisha
  o Bawan and Sursa blocks covered in Hardoi district, Uttar Pradesh
  o Rairakhol and Naktideul blocks covered in Sambalpur district, Odisha
Patterns in school provisioning, particularly at elementary and post-elementary stage

Phase 1:
Mapping of educational institutions

- GPS mapping of all educational institutions (schools, colleges, tuition centres and vocational institutes) in rural villages of sampled blocks.
- Basic information collected on highest and lowest grade offered, school type.
- June – July 2014

Phase 2:
School survey and baseline learning assessments

- Schools mapped in phase 1 and offering Std VIII selected for phase 2 survey.
- School survey done over two days and data collected on facilities, student enrolment and attendance etc.
- Baseline learning assessments conducted for all Std VIII students present in schools in Language (Hindi/Odia), English and Math
- October 2014 – February 2015

Phase 3:
End line student tracking and learning assessments

- (Std VIII) students from phase 2 tracked to record enrolment status and HH information.
- End line learning assessments in Language (Hindi/Odia), English and Math administered to gauge change over time.
- Assessments conducted at the community level, on school holidays.
- October 2015 – February 2016

Transition to secondary school and assessing student learning at the beginning of secondary (Std IX)
## Data collection and sample

<table>
<thead>
<tr>
<th>Study sites</th>
<th>Phase 1: GPS Mapping</th>
<th>Phase 2: Baseline school survey</th>
<th>Phase 3: End line survey</th>
<th>No. of children tested in baseline and end line assessments:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of villages surveyed</td>
<td>No. of schools surveyed at baseline</td>
<td>No. of children enrolled in Grade 8</td>
<td>Total children tracked</td>
</tr>
<tr>
<td>Total</td>
<td>592</td>
<td>282</td>
<td>11,264</td>
<td>9,868</td>
</tr>
<tr>
<td>Hardoi</td>
<td>207</td>
<td>206</td>
<td>9,187</td>
<td>7,939</td>
</tr>
<tr>
<td>Sambalpur</td>
<td>385</td>
<td>76</td>
<td>2,077</td>
<td>1,929</td>
</tr>
</tbody>
</table>
FINDINGS
More government schools (with Std VIII) were surveyed in both locations.

In both locations, surveyed private schools had relatively higher enrollments in Std VIII than government schools.

High student absenteeism, particularly in Hardoi, with less than 30% of enrolled Std VIII children present on both days of baseline survey.

**Schools (with Std VIII) surveyed (%):**

<table>
<thead>
<tr>
<th></th>
<th>Hardoi (N=206)</th>
<th>Sambalpur (N=76)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Govt</td>
<td>69.4</td>
<td>84.2</td>
</tr>
<tr>
<td>Pvt/Others</td>
<td>30.6</td>
<td>15.8</td>
</tr>
</tbody>
</table>

**Average enrollment in Std VIII:**

<table>
<thead>
<tr>
<th></th>
<th>Hardoi</th>
<th>Sambalpur</th>
</tr>
</thead>
<tbody>
<tr>
<td>Govt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pvt/Others</td>
<td>43</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>51</td>
<td>39</td>
</tr>
</tbody>
</table>

**% Std VIII students present:**

<table>
<thead>
<tr>
<th></th>
<th>Absent on both days</th>
<th>Present on any one day</th>
<th>Present on both days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Govt</td>
<td>22.0</td>
<td>60.7</td>
<td>16.8</td>
</tr>
<tr>
<td>Pvt/Others</td>
<td>17.3</td>
<td>57.3</td>
<td>16.8</td>
</tr>
<tr>
<td></td>
<td>29.4</td>
<td>65.7</td>
<td>16.1</td>
</tr>
<tr>
<td></td>
<td>13.3</td>
<td>17.5</td>
<td>27.9</td>
</tr>
</tbody>
</table>
In Hardoi, close to 40% children dropped out after Std VIII (in Year 2). This proportion is less than 10% in Sambalpur.

Progress is not necessarily linear, that is from Std VIII to Std IX. Unexpected transitions more visible among the cohort in Hardoi (10.3%). Transition in Sambalpur on the other hand is higher and in the expected direction - over 90% children transition to secondary school after Std VIII.
School transition post Std VIII mirrors provisioning trends in secondary sections.

**HARDOI**

- **% Schools offering**
  - Primary sections: 74.7%
  - Upper primary sections: 32.7%
  - Secondary sections: 8.2%

- **% Schools by type**
  - Primary sections: 70.9% (Government)
  - Upper primary sections: 63.0% (Government)
  - Secondary sections: 91.2% (Government)

- **% Children enrolled**
  - Std VIII (Baseline) Government: 53.4%

**SAMBALPUR**

- **% Schools offering**
  - Primary sections: 84.6%
  - Upper primary sections: 34.7%
  - Secondary sections: 11.6%

- **% Schools by type**
  - Primary sections: 97.9% (Government)
  - Upper primary sections: 96.9% (Government)
  - Secondary sections: 84.9% (Government)

- **% Children enrolled**
  - Std VIII (Baseline) Government: 77.7%
Learning levels in secondary grades fall short of curriculum expectations

In language (Hindi/Odia), written assessments tested children’s proficiency on reading comprehension tasks, simple vocabulary and grammar.

In arithmetic, written assessments included questions on numeric operation, word problems, fractions and decimals, geometry and mensuration.

Learning assessment tools created after extensive textbook review and multiple rounds of pilot. Included tasks from Std IV to Std VIII level.

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**Mean percentage scores in language written assessment for children in secondary grades at end line**

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>End line</th>
<th>Baseline</th>
<th>End line</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardoi</td>
<td>32.2</td>
<td>39.4</td>
<td>34.0</td>
<td>36.2</td>
</tr>
<tr>
<td>Sambalpur</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Mean percentage scores in arithmetic written assessment for children in secondary grades at end line**

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>Endline</th>
<th>Baseline</th>
<th>Endline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardoi</td>
<td>38.6</td>
<td>42.3</td>
<td>54.3</td>
<td>54.1</td>
</tr>
<tr>
<td>Sambalpur</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Students in secondary grades do not have similar levels of learning. In both locations and in both tests, there are major variations in student learning levels in secondary grades. Such diversity of learning levels in classrooms is bound to make the teaching-learning processes much more challenging for teachers and schools.

**LANGUAGE WRITTEN TEST**

![Chart showing baseline quartile scores in language]

**ARITHMETIC WRITTEN TEST**

![Chart showing baseline score quartiles in arithmetic]
Despite testing concepts from two to three grades below, students have very low levels of learning in language tests.

- Ability to answer comprehension questions (multiple choice and written) that require interpretive thinking is lacking. These skills are important for students in higher grades and life.
Children’s ability in solving key arithmetic questions is low despite eight years in school. About 6 in every 10 students in Hardoi and Sambalpur respectively **could not** solve a simple 3 by 2-digit division.

At end line, % children in secondary grades who could correctly answer

<table>
<thead>
<tr>
<th>Arithmetic Task</th>
<th>Hardoi</th>
<th>Sambalpur</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-digit by 2-digit Division</td>
<td>36.7</td>
<td>27.2</td>
</tr>
<tr>
<td>Word problem: Unitary Method</td>
<td>30.2</td>
<td>33.9</td>
</tr>
<tr>
<td>Word problem: Percentage</td>
<td>11.9</td>
<td>19.8</td>
</tr>
<tr>
<td>Mensuration (Area)</td>
<td>17.8</td>
<td>30.8</td>
</tr>
</tbody>
</table>

Q15. त्रिभुज की भुजाओं की लंबाई (Length of sides) परिमाण को पता करें।

1. बर्तन त्रिभुज (Equilateral Triangle)
2. त्रिभुज त्रिभुज (Isosceles triangle)
3. उलटे त्रिभुज (Scalene triangle)

Q17. राजू के पास एक खेत है, जहाँ उसकी भौतिक वस्तु यांत्रिक रूप से वितरण किया जाता है। नीचे दिया गया चित्र का खेत की लंबाई (Length) और चौड़ाई (Breadth) को दर्शाता है।

6m

12m

Q19. गणित की परीक्षा के कुल अंक 120 हैं। अगर इस परीक्षा में सुनियल 40% अंक प्राप्त करता है तो वहाँ उसे गणित की परीक्षा में कितने अंक मिले?

Q5. एक किसान एक क्यारी में 6 पीढ़े लगाता है। 138 पीढ़े लगाने के लिए उसे कितनी क्यारियों बनानी पड़ेगी?
What factors affect school continuation after Std VIII?

**Baseline Learning Outcomes**

- **Read at Std II level**: 70.9% Enrolled, 32.3% Dropout
- **Recognize 4-digit numbers**: 56.1% Enrolled, 25.7% Dropout

**Gender & Marital Status**

- Boys: 41.7% Enrolled, 58.3% Dropout
- Girls: 54.7% Enrolled, 45.3% Dropout
- Unmarried: 70.2% Enrolled, 29.8% Dropout
- Married: 59.1% Enrolled, 40.9% Dropout

**Grades Offered in Schools**

- Enrolled: 59.7% studed Std VIII from schools without secondary grades, 40.3% from schools with secondary grades
- Dropout: 89.5% studed Std VIII from schools without secondary grades, 10.5% from schools with secondary grades

**Parental Education & HH Affluence**

- Mothers with no education: 59.1% Enrolled, 40.9% Dropout
- Mothers with education: 85.5% Enrolled, 14.5% Dropout
- Fathers with no education: 24.32% Enrolled, 75.68% Dropout
- Fathers with education: 47.4% Enrolled, 52.6% Dropout
- Low affluence category: 61.9% Enrolled, 38.1% Dropout
Much of the government school provisioning in surveyed blocks is concentrated at primary and upper-primary levels. At the secondary school stage, private provisioning increases substantially in both locations. Trends in Hardoi are particularly startling with over-dependence on private secondary schools.

Considerable student absenteeism witnessed in Std VIII classrooms during baseline survey, although with major differences between the study sites. Regular attendance is one of the many requirements for ensuring continuous teaching-learning.

Much higher proportions of students in Hardoi dropped out in study compared to Sambalpur. Several factors like prior learning levels, number of grades offered in school, gender, marital status, parental education and household affluence influence children’s school continuation post Std VIII.

Learning levels at the end of elementary school (Std VIII) are below expected levels. Students entering secondary schools have low levels of learning in language and arithmetic concepts taught in primary and upper primary grades. Important to ensure that students are proficient in these skills given the demands of curriculum in high school.
Implications of findings and recommendations

• If the Rashtriya Madhyamik Shiksha Abhiyaan (2009) goal of achieving universal access to secondary education is to be met, school provisioning at the secondary stage should be increased
  • This has clear implications for access to post-elementary education for children from disadvantaged backgrounds. Our data indicates that children from schools providing continuous education in both elementary and secondary grades, were less likely to drop out.

• Findings confirm that all factors being equal, children’s prior learning levels are an important predictor of their continuation into secondary as well as later learning outcomes
  • It is therefore imperative that efforts to improve children’s learning levels begin much earlier in their educational trajectories in order to, both improve transition from elementary to secondary education as well as ensure minimum levels of ability in language and arithmetic.
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