

A Quasi-Experimental Study to Evaluate Structured Pedagogy in Uttar Pradesh and Madhya Pradesh

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Background

Post the launch of NIPUN Bharat, the National Foundation Literacy and Numeracy (FLN) mission, by the Ministry of Education, Government of India, on 5th July 2021, respective state governments across India have adopted the NIPUN Bharat mission and launched their own FLN missions to achieve the FLN goals spelt out in the National Education Policy (NEP), 2020.

Central Square Foundation (CSF), a leading Indian non-profit organization working in the education space, is supporting multiple state governments across India in designing and operationalizing the state-owned FLN missions in line with NIPUN Bharat. CSF works closely with key government stakeholders and ecosystem partners to develop goals, targets, and the mission roadmap.

The Intervention

In the states of Madhya Pradesh (MP) and Uttar Pradesh (UP), CSF and its coalition partners (consisting of technical and project management partners) are currently supporting the education departments on the rollout of components of the state-wide FLN programmes. Additionally, in certain pre-selected districts/blocks (referred to as 'demonstration sites'; two districts in MP - Shajapur and Sehore; one district in UP - Varanasi with a high touch block, Sewapuri), the technical partners in each state are providing additional resources in the form of on-ground teams to support the state with effective implementation of the FLN programmes. The design of the FLN programmes in the demonstration sites and the rest of the state is broadly similar, with the key distinction being the additional resources expected to result in higher implementation fidelity of the FLN programmes in these demonstration sites.

Evaluation of the Demonstration sites

To measure the impact of the FLN programmes in the demonstration sites vis a vis the rest of the state, on the student learning outcomes (SLO) and to also unpack the 'what' and 'how' of the processes and practices that are helping improve FLN learning outcomes in these two states, CSF

decided to conduct a three-year evaluation study (2022-2025). The proposed evaluation started from the academic year 2022-23 and will continue for three academic years from 2022-23 to 2024-25 comprising an impact evaluation (i.e., FLN assessments of students in early primary grades) and a process evaluation to understand the implementation fidelity of the FLN programmes.

Evaluation design

A quasi-experimental (QES) research design is used for the FLN assessments with a two-step cluster random sample approach where the sample is first randomized at a school level, and then within each school, a subset of students is selected at random from the school population. This is because the intervention is essentially an increased dosage and improved fidelity model of what is happening statewide. In addition to FLN assessments, a process evaluation (i.e., a qualitative, explanatory study to understand the implementation fidelity of the FLN programmes in MP and UP, and to identify factors that contribute to creating enabling conditions for the most important features of the implementation of the FLN programmes at a systemic level).

Cohort design

The study aims to measure the learning outcomes of two different cohorts of students in primary grades over the three rounds of evaluation. The objective of including two different cohorts in this study is to understand the differential impact of the FLN interventions throughout the program. The underlying hypothesis is that the impact of the FLN programmes increases over time as the system's capacity to deliver the intervention improves in Year 2.

Hybrid Cohort Design			
<i>Grades will be selected as repeated cross-section</i>			
Year 3	Grade 1	Grade 2	Grade 3
Year 2	Grade 1	Grade 2	Grade 3
Year 1	Grade 1	Grade 2	Grade 3

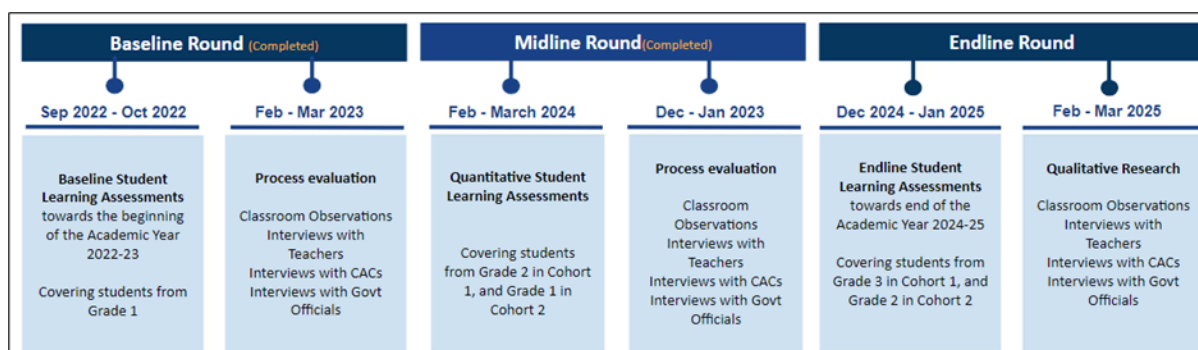
Figure 2: Hybrid Cohort Design

Sample size

The study used a Minimum detectable effect size sampling method with MDSE = 0.11, ICC = 0.15 with 95% CI and 80% power. Additionally, the proportion of samples between the intervention and the control groups would be kept at 50:50.

UP Sample size till midline				
Round	Group	Grade 1	Grade 2	
Baseline (19th Sep - 22nd Oct 2022)	Demo-High Touch	100 Schools		
		1,084 Students		
	Dem-Low Touch	109		
		1,006 Students		
	Non-Demo	99 Schools		
		1,152 Students		
Midline (06th Feb - 13th Mar 2024)	Demo-High Touch	107 Schools	104 Schools	
		1,055 Students	1,093 Students	
	Demo-Low Touch	103 Schools	102 Schools	
		1,056 Students	1,066 Students	
	Non-Demo	115 Schools	108 Schools	
		1,079 Students	1,033 Students	
MP Sample size till midline				
Round	Group	Grade 1	Grade 2	
Baseline (9th Sep - 14th Oct, 2022)	Demo	142 Schools		
		749 Students		
	Non-Demo	145 Schools		
		700 Students		
	Demo	140 Schools		142 Schools
		627 Students		678 Students
Midline (28th Jan - 1st Mar, 2024)	Non-Demo	140 Schools	144 Schools	
		670 Students	657 Students	

Baseline: The process evaluation round was carried out in demo areas in Uttar Pradesh (90 classrooms) and Madhya Pradesh (60 classrooms) in baseline and 15 classrooms each in MP and UP during the midline. As part of the quasi-experimental study, a matching control unit (school) was identified for each selected treatment unit (a school in the demonstration sites) which is similar to the treatment unit on relevant, observable characteristics except the access to the additional support provided by the technical partners (treatment). Coarsened Exact Matching (CEM) was used for the creation of a comparison group in this study. The tools used for Student Learning Outcomes were prepared through adaptations of the EGRA and EGMA frameworks. A mix of identical (common), similar, and new items is used to ensure comparison over time.



Key findings of the evaluation

The midline was completed recently in March 2024 and the FLN assessment results are being calculated and underway. However, the process evaluation round shed light on the performance of the intervention in both states.

Uttar Pradesh:

Literacy

- There is a positive shift in literacy in asking open-ended questions, teacher feedback, and key FLN-related actions while other practices show marginal improvement.
- Other key classroom practices in literacy like giving clear instructions, and timely feedback to students remained the same

Numeracy

- In numeracy, a big positive shift in teachers' giving clear instructions and asking Check-for-understanding (CFUs) questions was found.
- Remaining actions including ensuring the participation of students and asking open-ended questions show marginal improvement in numeracy classrooms.

Key enablers for positive classroom practices:

1. **Engaging TLMs & easy to use Lesson Plans:** Many teachers expressed positive opinions about the TG and the TLMs because they are easy to use and effective in teaching
2. **Frequent visits by mentoring cadres:** All mentoring cadres reported visiting once a month and observing the classroom for 2 hours
3. **The usefulness of *Sankul* meetings:** Both teachers and mentoring cadres find meetings helpful for aligning on goals and clearing doubts.
4. **Systematic tracking of student assessment data:** It helps in knowing how children are learning periodically and helps in course correction in between.

Key barriers hindering positive classroom practices:

1. **Length of Hindi lesson plan:** The lesson plan is lengthy and hinders teachers from completing the lesson within the stipulated time.
2. **Lack of demonstrations by mentoring cadres:** Lack of demonstration from mentoring cadres on how to conduct respective exercises and generic feedback instead of detailed and specific ones hinders teacher improvement.
3. **Late delivery of resources:** The late delivery of teaching guides and TLMs hinders the teaching process
4. **Student absenteeism:** Student absenteeism is a major concern for teaching, remediation, and learning level tracking and improvement.

Madhya Pradesh:

A big positive shift in literacy in asking open-ended questions is visible while other practices show marginal improvement. In numeracy, while there are improvements in asking Check-for-understanding (CFUs) questions, other classroom practices remain the same.

Key enablers for positive classroom practices: Engaging TLMs and single lesson plan for Grades 1 & 2 in Numeracy, Frequent visits by mentoring cadres, Usefulness of FLN Samvads, and systematic tracking of student assessment data.

Key barriers hindering positive classroom practices:

1. **Length of Hindi lesson plan:** The lesson plan is lengthy and hinders teachers from completing the lesson within the stipulated time.
2. **Lack of guidance on remedial plans:** While conventional remedial methods are being used, no structured remedial plans are in use to address remediation.
3. **Multigrade classrooms:** The multigrade (Grades 1 & 2 as one class) system hinders teachers to give focus on both grades
4. **Generic feedback:** No specific feedback related to tasks or practices.
5. **Student absenteeism:** Student absenteeism is a major concern for teaching, remediation, and learning level tracking and improvement

Way Forward

CSF is exploring and will finalize the way forward after the triangulation of FLN assessment data with process evaluation data. Meanwhile, the below-mentioned course correction steps are being taken as a way forward.

1. Enhancement of Hindi lesson plan in both states
2. System tracking of classroom observation data in addition to SLO data to dive deep into classroom practices periodically.
3. Creating a robust monitoring plan based on this information to give live feedback for operational effectiveness
4. Enhancing feedback delivery of mentoring cadres through training and demonstrations.
5. Help create remediation plan structures for teachers to provide structure remediation for students.

In addition to these programmatic changes, the endline planning is also currently underway.