CENTRAL SQUARE
FOUNDATION

Highlights Report

SYSTEMIC DRIVERS OF FOUNDATIONAL LEARNING OUTCOMES

Overview of the Report

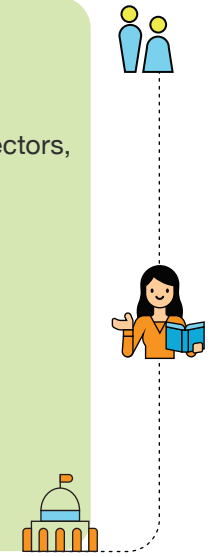
India has almost achieved universal enrolment of children in primary schools. The focus of the government has now shifted to retaining children by providing quality education in schools. Despite several education reform initiatives being undertaken by many states, learning assessments have highlighted that foundational literacy and numeracy levels- children's ability to read with comprehension, write and do basic mathematical operations, are low across India.

This document is a synthesis of current evidence on key factors driving low foundational learning outcomes in India

This report is focused on factors impacting FLN outcomes in government schools, for details on drivers of low outcomes in private schools please read our State of the Sector Report on Private Schools in India.

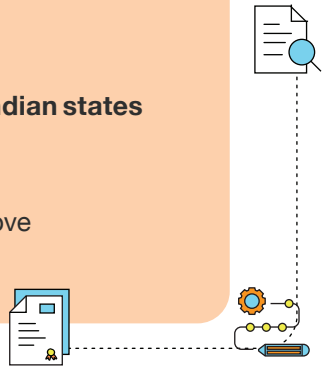
Who should read this report?

1. **Policymakers in state and central institutions** (e.g. Education Ministers, Secretaries, Directors, Commissioners, District Education Officers, District Collectors) who are at the forefront of designing and implementing effective reform strategies in school education
2. **Teachers, School Leaders and other stakeholders** in the system who are at the frontline of delivering education reforms
3. **Practitioners, Civil Society Organizations, Consultants and Researchers supporting governments with education reform**



Why should you read this report?

1. **To build a strong understanding of evidence** on the current functioning of education systems, key bottlenecks and **challenges faced in improving the quality of foundational learning outcomes**
2. **To learn from** a curation of case studies on **promising interventions tried in Indian states and other countries**
3. **For guidance on designing or implementing effective programmes** to improve foundational learning outcomes



Executive Summary

Systemic Drivers of Foundational Learning Outcomes

India's Foundational Learning crisis

India's schooling system is the largest in the world - 25 crore children are enrolled in 15 lakh schools. We have almost achieved universal enrollment of children at the primary level, with half of our school going children in primary grades. But, our schools do not equip them with Foundational Literacy and Numeracy (FLN) skills. This is critically important because **children who fall behind early, rarely catch-up.**

~21%

Of grade 3 students can read a grade 2 text or do subtraction

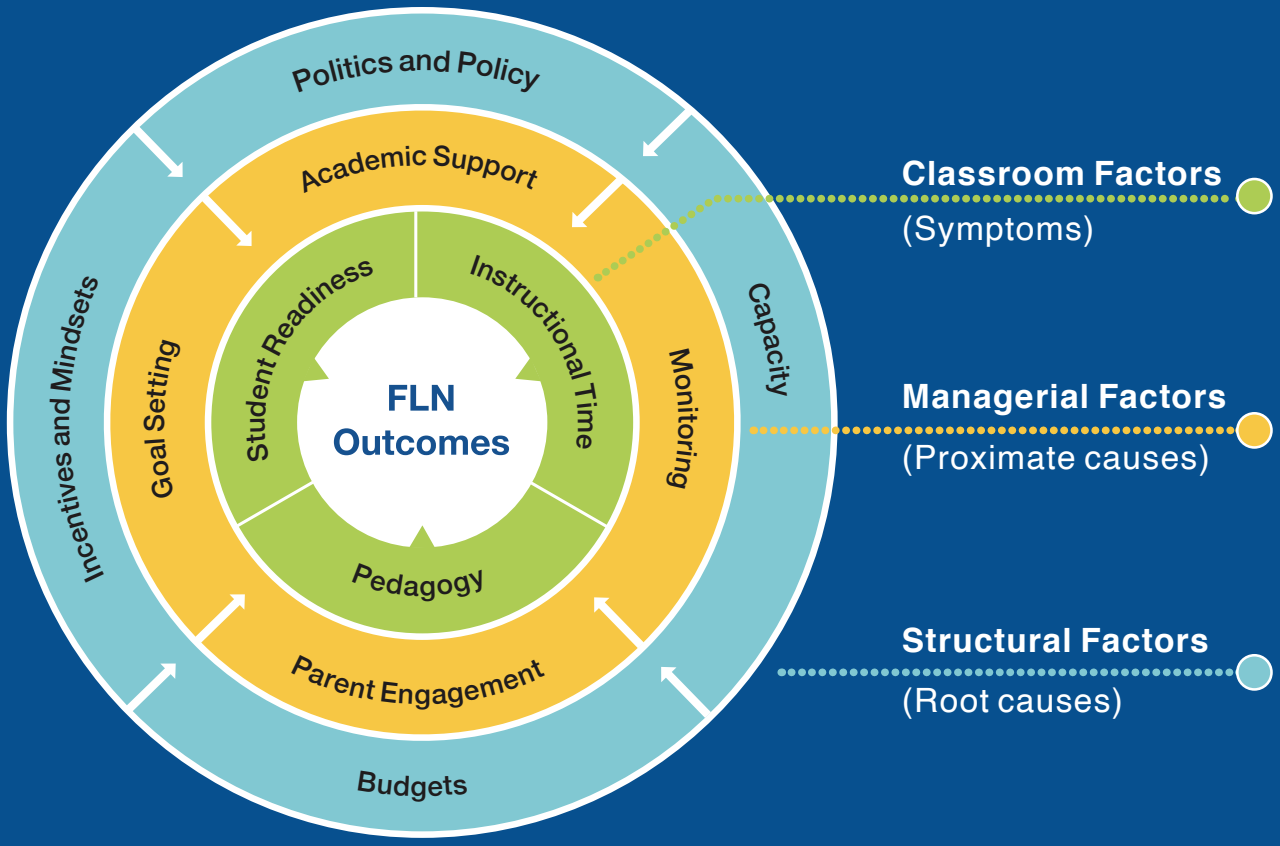
(ASER 2018, data includes only government schools)

The National Education Policy 2020 recognises the importance of this problem, asking for FLN to be the "highest priority of the education system", and "...this Policy will become relevant only if this...is first achieved". However, addressing this issue effectively requires us to understand it first. This report, focused on the public school system[1], condenses primary research from interviews and observations of ~700 stakeholders across 5 major Indian states, as well as findings from a comprehensive literature review. Our hope is that, as NIPUN Bharat takes off, we can help build a shared understanding of the shortfalls in delivering FLN outcomes, along with alignment on a set of actionable recommendations.

Why are foundational learning levels low?

The most summarised version is that **our managerial/administrative systems prioritise inputs and processes over actual learning.** We document the 'symptoms' of this in classrooms that are not set up for learning. We also investigate the root causes - the relative (in)visibility of a child's learning when compared to a school building with a teacher, the policy choices that we have made as a result, and the incentives and mindsets that drive, or rather, don't drive, our systems. While each of these 'levels' of the problem are important and examined in detail, we recommend intervening in the 'managerial' system because that is where evidence suggests the greatest possibility of change lies.

1. For details on drivers of low learning outcomes in private schools, please read our State of the Sector Report on Private Schools in India.



The symptoms of the problem are visible in our classrooms

When children enter class 1, they are already far behind where the curriculum expects them to be- **over 57% of students are not ready for school in grade 1** (Kaul et al (2017). In schools, they do not receive sufficient exposure to literacy and numeracy as **45% of instructional time is lost every year due to absenteeism, non-teaching duties and multigrade classrooms.** And when they do receive instruction, teaching and learning methods used in classrooms are rote and repetitive, which leave most children disengaged and unable to master basic literacy and numeracy skills.

70% of teaching time in classrooms is spent on traditional teaching and rote pedagogy[2]

In managing our school systems, we do not make FLN a shared goal nor do we monitor & support in ways that enable us to deliver it

Even where learning outcomes are defined, we found that stakeholders in the system do not hold a shared understanding of what children are expected to learn by grade 3. There is a higher focus in the system on 'checking the boxes' on inputs and processes than whether children are learning.

2. Sankar et al 2014.

None of the stakeholders interviewed were aligned on critical goals that students need to achieve by grade 3

Our monitoring systems are geared to focus on measuring and tracking inputs and processes (Bhatty 2016). There is a lack of focus on how many kids are learning, instead the focus of teachers is on ensuring that the syllabus is completed on time (NUEPA 2016) and registers are maintained, because this is what gets tracked by the officials who visit their schools. On the rare instances where student learning outcomes data is monitored in early grades- the reliability of this data collected is questionable with evidence of significant **inflation in test scores reported by schools** (Singh 2020, Johnson et al 2020).

80% of indicators in school monitoring tools were related to inputs, infrastructure and compliance with rules

Schools are not adequately supported with resources to help children learn - **only 30% of classrooms had teaching-learning materials other than textbooks** (Bhatterjea et al 2011). When teacher training is conducted, the percentage of teachers trained is given more attention in the system than what topics or how teachers need to be trained. This along with ineffective training delivery methods explains why only **one-third of teachers report that the in-service training they received was beneficial** (Sankar et al 2014).

The invisibility of learning influences our policies and politics, resulting in a system with inefficient public expenditure and low capacity to improve FLN

Unlike higher grades where board exam performance is tracked and discussed, in early grades the focus on learning is minimal for parents and thus for political leaders. When education systems were attempting to reopen after Covid-19, governments across India prioritized higher grades so that children can be 'exam ready'; most states never reopened schools for primary grades in the last 16 months. School systems prioritize other tangible issues like school buildings, number of teachers and enrollment of children because these are visible, easy to measure and track (Khemani 2019, Pritchett 2015, Beehary 2021).

This prioritization of inputs that have shown no impact on outcomes in the past, is also reflected in the choice of budget allocations- **79%-95% of state budgets allocations are focused on teacher salaries, infrastructure, mid day meals and student incentives like uniforms, bicycles or scholarships** (CBGA and CRY 2016). This leaves minimal fiscal space to improve the quality of learning by investing in providing better teaching-learning material, improving training or monitoring systems.

There are weak incentives for teachers and other stakeholders in the system to improve learning levels because the quality of teaching practices and student performance has no impact on their employment terms (e.g salaries, promotions, deployment and transfers). All of the above structural issues have led to an education system that has been unable to deliver foundational learning at scale.

Solving our Foundational Learning Crisis

On 5th July 2021, India launched a National Foundational Literacy and Numeracy (FLN) Mission with the goal - Every child attains FLN by the end of grade 3, by 2026-27. This is a critical first step taken at a national level. But we cannot achieve this goal conducting business as usual. Successful FLN programs have shown that **in the short/medium term, FLN outcomes can be improved by focusing on three key areas which should be tightly coupled together - Goal Alignment, Academic Support and Monitoring.**

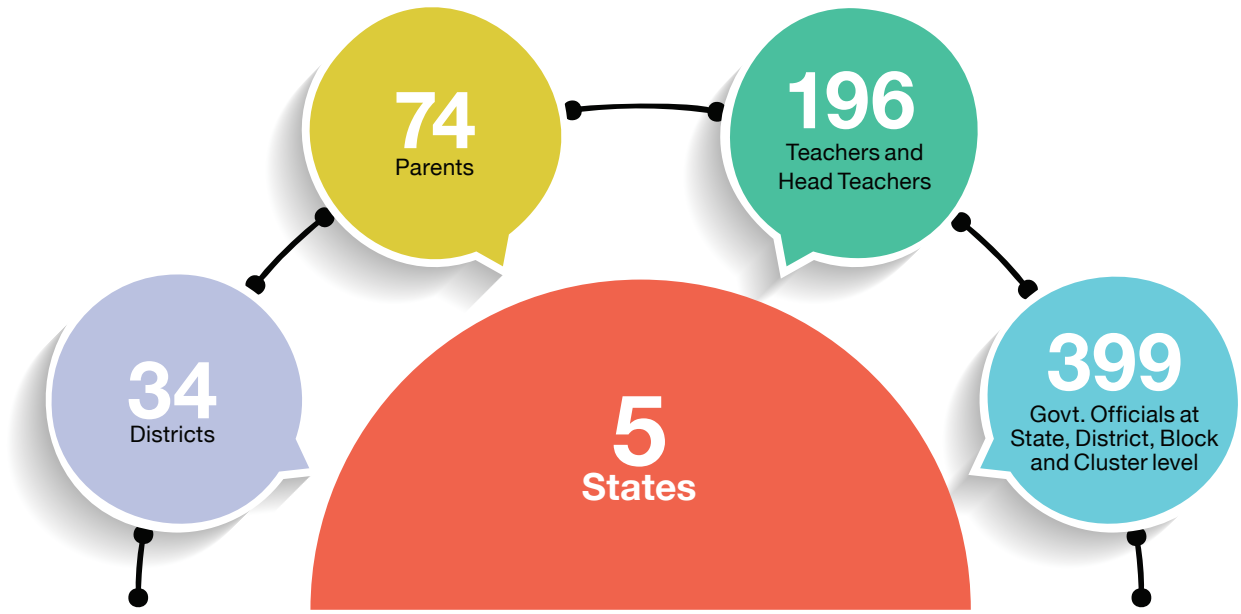
To sustain improvements in learning outcomes in the longer term, making foundational learning a priority for parents and political leaders by making it more visible is a critical lever to focus on. Implementing NEP's recommendation on low stakes competency based key stage assessments in primary grades will help achieve this. Further, improving the quality of teaching through pre-service education reforms, aligning incentives of actors with learning outcome improvement and improving the quality of expenditure on school education are critical structural issues that will lay the foundation for a school system that can deliver universal foundational literacy and numeracy.

Research Methodology

This document has been created to understand the key drivers of low foundational learning outcomes in India through a combination of primary and secondary research.

- Extensive Review of Existing Literature
- Semi-Structured Interviews and Focus Group Discussions
- Observations of Classrooms, Trainings and Review Meetings
- Review of Government Documents and Records
- Data Analysis and Quantitative Surveys with Teachers

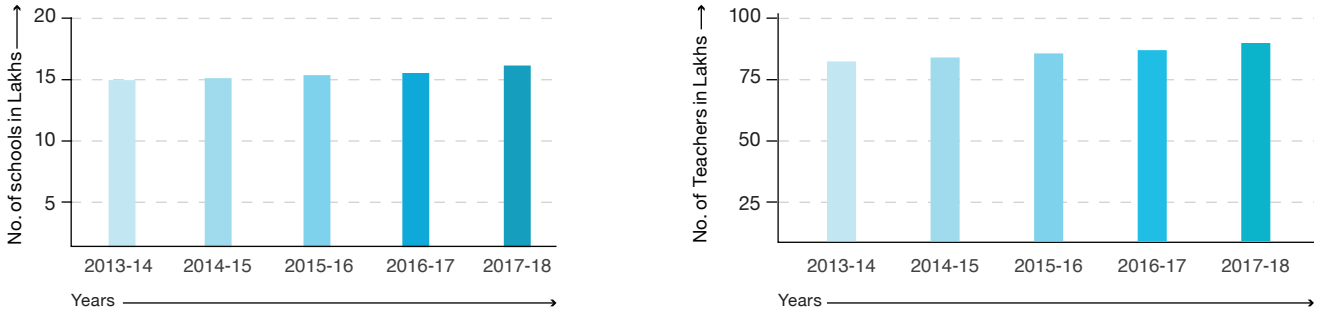
Primary Diagnostics Sample



India has succeeded in enrolling most children in primary schools

25 crore children are enrolled in 15 lakh schools, and are taught by 92 lakh teachers

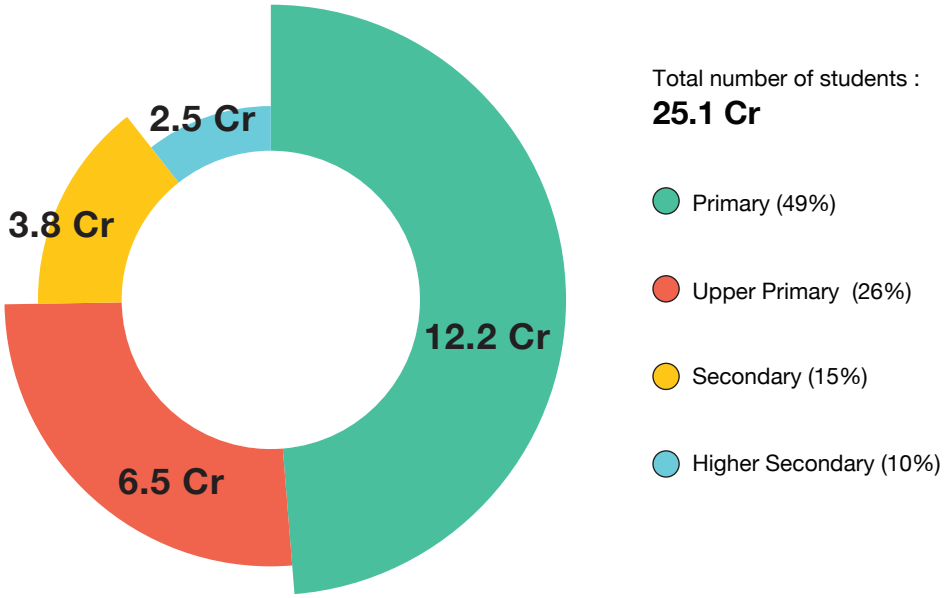
Fig 1.1 Number of schools and teachers in India



Source: CSF 2020

Half of India's school going children are in primary grades

Fig 1.2 Enrolment by level of education (2017-18)



Source: CSF 2020

Source: Central Square Foundation (2020): School Education in India; Data, Trends and Policies

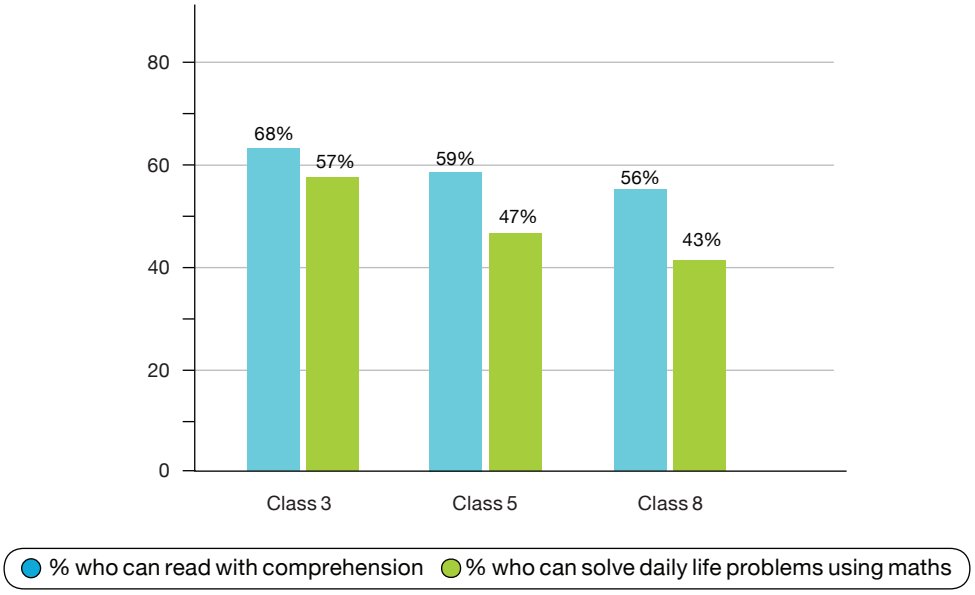
Schooling however, has not translated into learning

Our primary schools do not equip children with Foundational Literacy and Numeracy (FLN) skills, leaving them ill-prepared for further learning

Most children in India haven't achieved foundational skills

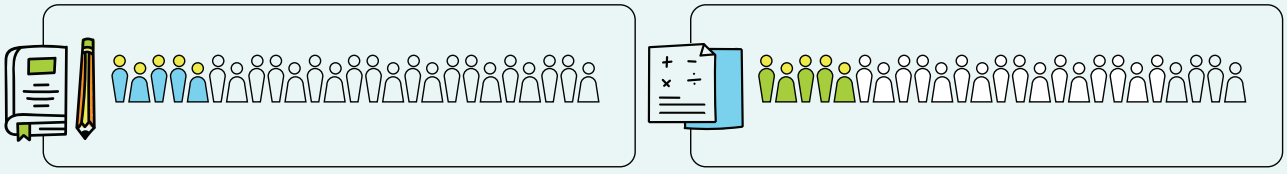
The National Achievement Survey (NAS) 2017 conducted by NCERT highlights poor attainment in early years

Fig 1.3: Student performance on grade appropriate critical skills in Language and Numeracy



Source : NAS 2017

Independent surveys confirm the low levels of foundational learning in India



20.9% of grade 3 students in schools in rural India can read a grade 2 text

20.9% of grade 3 students in schools in rural India can do subtraction

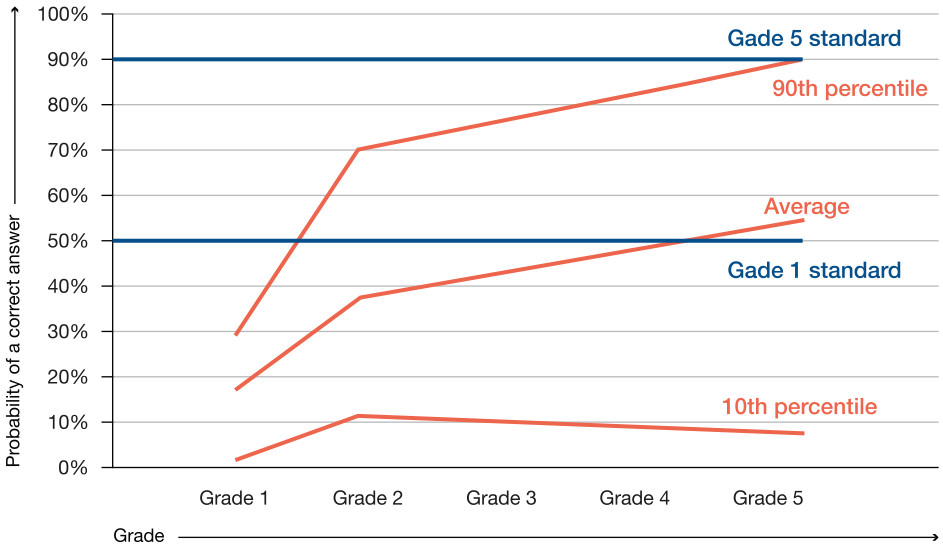
Source: ASER 2018

Source: ASER 2018, Data includes only government schools

Children who fall behind in early grades rarely catch-up later

Learning trajectories flatten after grade 2, suggesting that early math and reading skills are strong predictors of later performance

Fig 1.4: Probability of a correct answer on a math test, by grade, relative to curriculum standards - AP, India



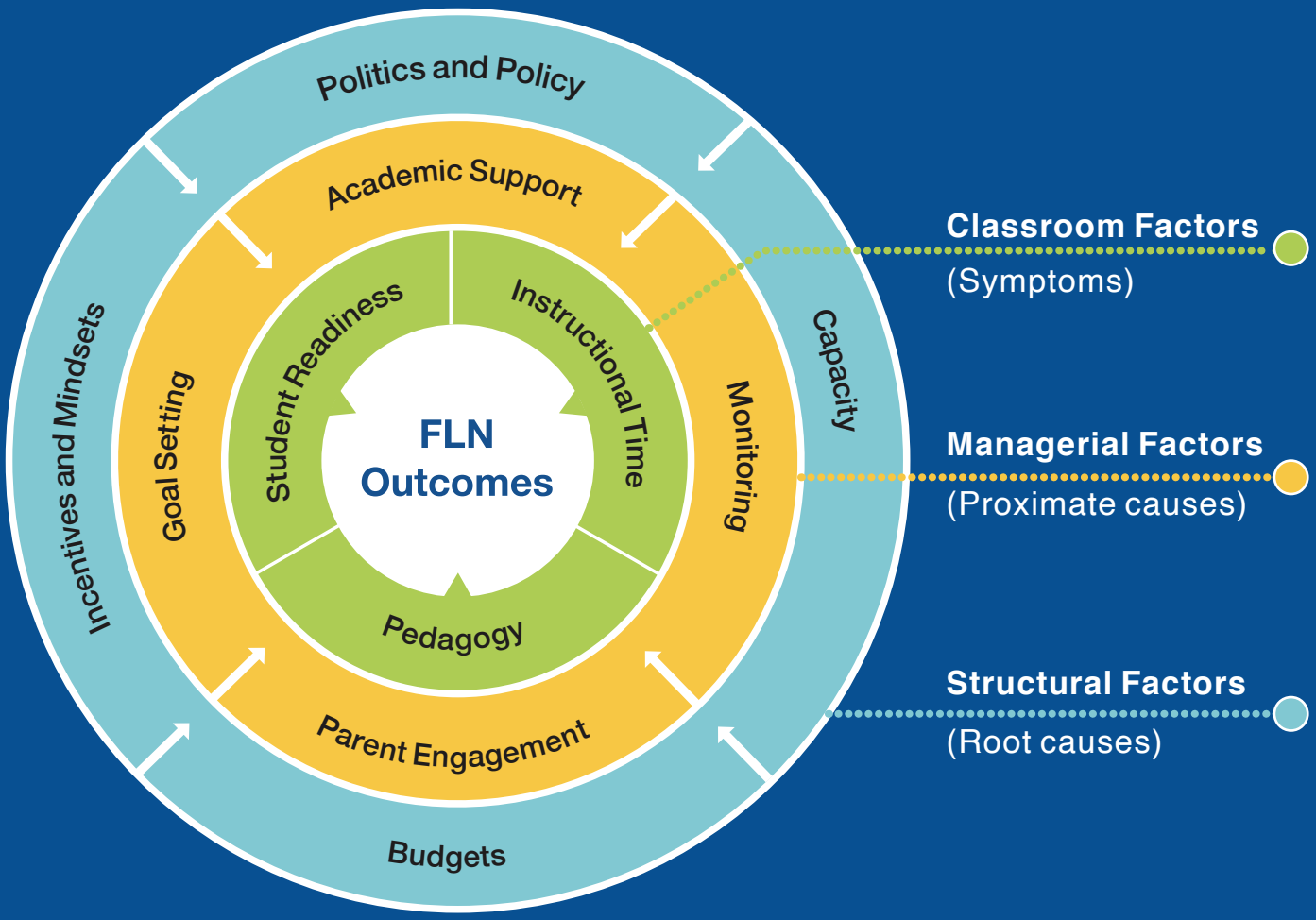
Source: World Bank 2018

1. At the end of 5 years of primary schooling, the average student in grade 5 only reached grade 1 standards
2. Only the top ten percentage of students were able to keep pace with the curriculum
3. The bottom percentile of students learnt very little from each additional year in school after Grade 2

Source: 3. World Bank (2018) using data Muralidharan and Zieleniak (2013)

Diagnostic Framework

Deep rooted structural factors result in a managerial system which prioritises inputs and processes, manifesting in classrooms that are not setup for learning



A set of interdependent factors operating at 3 levels- Classroom, Managerial and Structural, as represented by each of the concentric circles above, lead to low foundational literacy and numeracy outcomes

Low school readiness of children, limited instructional time and weak pedagogical practices are symptoms visible in classrooms of deeper issues

STUDENT READINESS

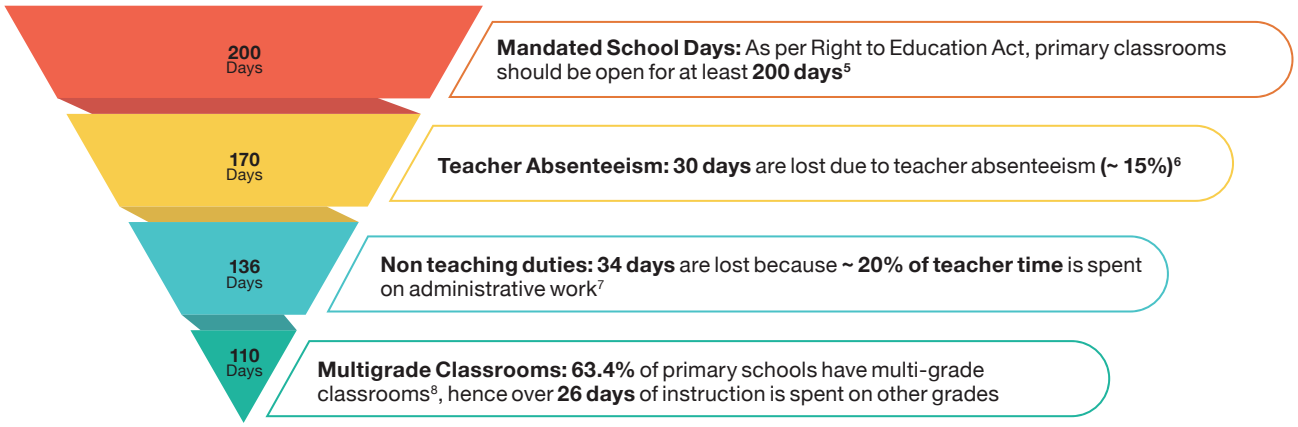
Over 57% of students are not ready for school in grade 1[1]

Children enter primary schools without necessary pre-literacy and pre-numeracy skills required to keep up with the pace of the curriculum[1,2]

- **Only 30% of children** at age 5 were able to do relative comparison tasks[1] and **15%** were able to do reading readiness tasks[1]
- Instruction in pre-primary schools is not developmentally appropriate[3], **~29%** of time is spent on formal teaching of 3 Rs (reading, writing and arithmetic) which experts recommend should only be taught in primary schools[4]

INSTRUCTIONAL TIME

45% (90 days) of instructional time is lost per year due to absenteeism, non-teaching duties and multigrade classrooms



- **Mandated School Days:** As per Right to Education Act, primary classrooms should be open for at least **200 days**[5]
- **Teacher Absenteeism: 30 days** are lost due to teacher absenteeism **(~ 15%)**[6]
- **Non teaching duties: 34 days** are lost because **~ 20% of teacher time** is spent on administrative work[7]
- **Multigrade Classrooms: 63.4%** of primary schools have multi-grade classrooms[8], hence over **26 days** of instruction is spent on other grades

PEDAGOGY

70% of teaching time is spent on traditional teaching & rote pedagogy

- Traditional teaching and rote methods are less effective in teaching children, and **only 30% time is spent on student centric activities**[9] that are more important in our heterogeneous classes
- **~63%** of primary classrooms are multigrade, yet **70%** of time teachers are focusing their teaching only on one grade[10]

1. Kaul et al (2017) | 2. School Readiness levels could also be low due to low GDP per capita but it's outside the scope of this report | 3. Kaul et al (2019) | 4. Kaul et al (2017), average of time spent in anganwadi centres and private pre primary schools | 5. CSF State Diagnostic | 6. ASER 2018 | 7.CSF State diagnostics, most conservative estimates chosen but secondary research range is 26-48%. | 8.ASER (2018) | 9.Sankar et al (2014) | 10.Ibid

There is no alignment across different system actors on learning goals

All states have created learning outcome frameworks, but none of the stakeholders interviewed were aligned on critical goals that students need to achieve by grade 3[1]

What should a child learn by grade 3?

"Children should learn atleast **50% of grade syllabus**"

-Teacher

"Students should know **counting up to 100,** basic addition and subtraction by **grade 3**"

- HeadTeacher

"A child should master atleast **80% of their grade syllabus**"

-Cluster official

"At the end of **grade 3, a child should know how to read and write their name, parent's name and address"**

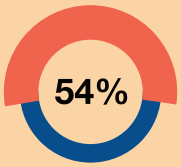
- District Official

1. CSF State Diagnostics

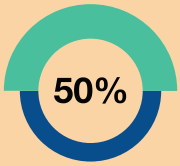
Stakeholders prioritise 'checking the boxes' on inputs and processes to the detriment of outcomes

Focus on inputs and processes

High focus on administrative tasks



54% of BRC's time is spent on administrative activities[1]



50% of a CRC's time is spent on administrative activities[1]

Syllabus completion is more salient than achievement of competencies

- Despite high learning gaps, teachers focus on ensuring all the material in the syllabus is covered so that students can be 'exam ready'[2]
- Syllabus completion is tracked during school monitoring visits by officials which signals to teachers that it's an important goal
- Children who are unable to keep pace with the syllabus are often left behind as the teacher moves on to the next chapter even if all students have not mastered the previous chapter

Higher focus on learning in later grades

- Student performance is regularly measured and tracked system wide by states for secondary and higher secondary grades (i.e grade 10 and 12) through board exams
- The same focus on improving learning outcomes does not exist for early grades. Most **states do not invest in measuring and tracking achievement of basic competencies in primary grades**
- Increasing focus on quality of learning in early grades is likely to improve student performance in later grades

1.MHRD (2010) | 2. NUEPA (2016), Most assessments test for grade level content mastery instead of testing for competencies

Availability & efficacy of teaching-learning materials (TLM) are low

Only 30% of classrooms had TLMs other than textbooks and where available TLM quality is low[1]

A wide variety of high quality teaching and learning material (e.g teacher guides, student workbooks, story books etc) aids in building conceptual understanding of abstract concepts and makes learning more engaging for children.

Limited availability

One third of teachers report unavailability of story books, maths kits, TLMs children can use and teacher guides[2]

Limited use

Even when TLM was present, teachers only used textbooks 39% of the time

Only 12% of time teachers were using other materials (e.g manipulatives and visuals)[2]

If the suggestions in the TLM are time or effort intensive, teachers typically don't use them[3]

Low efficacy

Existing TLM promotes rote learning, has negligible emphasis on parallel processing of literacy skills[4] and is too fast paced with limited opportunities to reinforce learning[5]

1. Bhatterjea et al (2011) | 2 Sankar et al (2014) | 3. Menon and Thirumalai (2016) | 4. Menon at al (2017) and CSF State Diagnostics | 5. CSF State diagnostics

In-service training, coaching & professional development are not aligned to teacher needs

Only one-third of teachers reported that the in service training they received was beneficial[1]

- Most in service trainings are designed on an ad hoc basis and states do not have a policy for teacher training[2]
- There is a higher focus in the system on percentage of teachers trained than what topics or how teachers need to be trained[3]
- The cascade approach of teacher training dilutes quality because of transmission loss through multiple layers of trainers[4]
- Teachers find little practical application of training because trainers use lecture based techniques and didactic means instead of demonstrations or practical sessions[5]
- **68% of BEOs and 46% of CRCs did not receive any training after being appointed[6]**. Middle management cadre at the cluster and block level cannot provide teachers with adequate academic mentoring due to limited bandwidth and capability gaps[7]

1. Sankar et al (2014) | 2. NUEPA (2016) | 3. Justice Verma Commission Report (2012) | 4. Kidwai et al (2013) | 5. Ibid, R Shetty (2014), Dyer (2005) | 6. Bhatty et al (2016) | 7. Aiyar et al. (2016), MHRD (2010) and CSF State diagnostics

Monitoring is focused on inputs, processes and programs; data collected tends to be unreliable and feedback loops are broken

In 4 out of 5 states, monitoring was disproportionately focused on inputs

Existing monitoring tools typically don't track quality of teaching practices and learning levels from spot assessments **- 80% of indicators in school monitoring tools were related to inputs, infrastructure and compliance with rules.**[1]

1

Indicators on quality that were present were poorly designed with no guidelines or criteria for officials to assess classroom observations against these indicators.

2

Indicators on learning were not consistently reported **- 50% of BRCs and 48% of CRCs did not include scores from random tests** they conducted during visits in the school monitoring format.[2]

3

During school visits, officials spend most of their time checking registers that teachers are expected to maintain, checking student notebooks and filling up forms[3]

4

Data collected is unreliable and in all 5 states feedback loops were broken at district/block level

- Research has found evidence of significant assessment data manipulation by the state machinery[4]. Reported **achievement levels in a state conducted large scale assessment were almost double that of independent retests**[4]
- Perceived high stakes of assessments create perverse incentives for state actors which coupled with weak state capacity make it challenging to collect reliable data on student performance
- **62% of CRCs and 49% of Head Teachers report that monitoring has become a data gathering exercise with limited focus on using the data for course correction**[5]
- Monthly/quarterly review meetings are mainly focused on routine administrative matters or filling data, the data itself is rarely discussed or used for targeted support[6]

"CRC, BRC only ask about MDM, school facilities and any date requests; they never place emphasis on learning parameters of schools."

- HM

"In the earlier years everyone followed the rules for assessments. But over time we have seen the number of D and E grades come down"

- State Official

1 CSF State Diagnostics, Analysis of monitoring tools across 4 states where input fields included teacher or student information on attendance and enrollment | 2. Bhatty et al (2016) | 3. CSF State Diagnostic | 4. Singh (2020) and Johnson et al (2020) | 5. Bhatty et al (2016) and Aiyar et al (2016) | 6. Vincy Davis (2015)

Parents are not effectively engaged in supporting their child's learning at household or school level

Engaging each parent in their child's learning can play an important role in achieving FLN

Greater parental involvement in children's learning positively affects the child's school performance, including higher academic achievement[1]

Parent engagement also promotes better child behavior, morale, attitude and social adjustment[2]

The school system is already stretched thin and the involvement of parents is more critical to provide necessary extended academic support at home

Existing initiatives like SMCs do not focus on supporting learning and are largely dysfunctional[3]

28% schools did not have SMCs[4]

36% of schools with SMCs did not prepare school development plans[4].

- SMCs were constituted for school monitoring. Their responsibilities include preparing school development plans (SDPs) and monitoring utilization
- SMCs are usually involved in issues other than quality of learning. For example, SDPs are focused on school infrastructure instead of learning[5]
- PTMs are held infrequently and have low attendance from parents

Low parent self efficacy along with low knowledge and tools limits parent engagement

- Parents do not have clarity in the role they can play to facilitate their child's learning[6]
- Many parents from low socio economic backgrounds believe that they are not capable of supporting their children learn[6]
- Parents are unaware of their child's learning levels[7] and seem to only associate school quality with parameters such as physical infrastructure, cleanliness, safety and meals[7]

1. Lin (2003) | 2. Nokali et al. (2010) | 3. Oxfam (2015), TISS (2019), Duflo et al (2010) | 4. UDISE (2017-18) | 5. Taylor et al (2019) | 6. CSF State Diagnostics | 7. Vaijayanti (2017) and CSF State Diagnostics

Unlike inputs, learning is invisible to parents and thus to political leaders, so they prioritize other tangible factors

Learning levels are invisible to parents and political leaders and have been persistently low

- **Measuring learning reliably** and with precision over a period of **time is difficult and requires high state capacity.**
- Learning levels have also been persistently low across states with several unsuccessful attempts to improve them.
- **Citizens typically vote on issues** (e.g. abolishing schools fees, building roads) **that they can see but not on outcomes** like schools quality which are less tangible, dependent on multiple factors and over which political leaders may not have direct influence[1]

Parents and Governments prioritize tangible factors

- Parents care about quality of learning but it is hard to judge how much their child is learning especially in younger grades
- Hence **parents associate school quality with parameters such as infrastructure, safety, cleanliness etc**[2]
- This incentivizes political leaders to prioritise what is visible, measurable and easy to sell (i.e. to show improvements in school inputs like, school infrastructure, mid day meals, number of schools and teachers, laptop distribution etc)[3].
- A **lack of electoral demand for quality primary education leads to FLN rarely being prioritized**[4]
- Politics in turn shapes the culture of bureaucracies, resulting in higher focus on tangible factors (like inputs) all the way to the front lines of service delivery[5]

1. Harding and Stasavage (2013) and Mani and Mukand (2017) | 2. CSF State Diagnostics, Vaijayanti (2017) | 3. Pritchett (2015) | 4. Harding and Stasavage (2013) as cited in Girin (2021) | 5. Khemani (2019)

Our focus on inputs has resulted in an overabundance of small schools, which makes fiscally sound provision challenging

Input orientation of laws and policies

- RTE mandates minimum input norms on infrastructure, pupil teacher ratios, teacher qualifications, distance of schools from each habitation etc.
- Research indicates that in the past, the focus on providing these inputs had no impact on outcomes[1]
- Only in 2017 the Act was amended to reference learning outcomes that children can be expected to achieve

Implications

i. **85,743** single teacher primary schools[2] and **63%** of schools have multigrade classrooms[3]

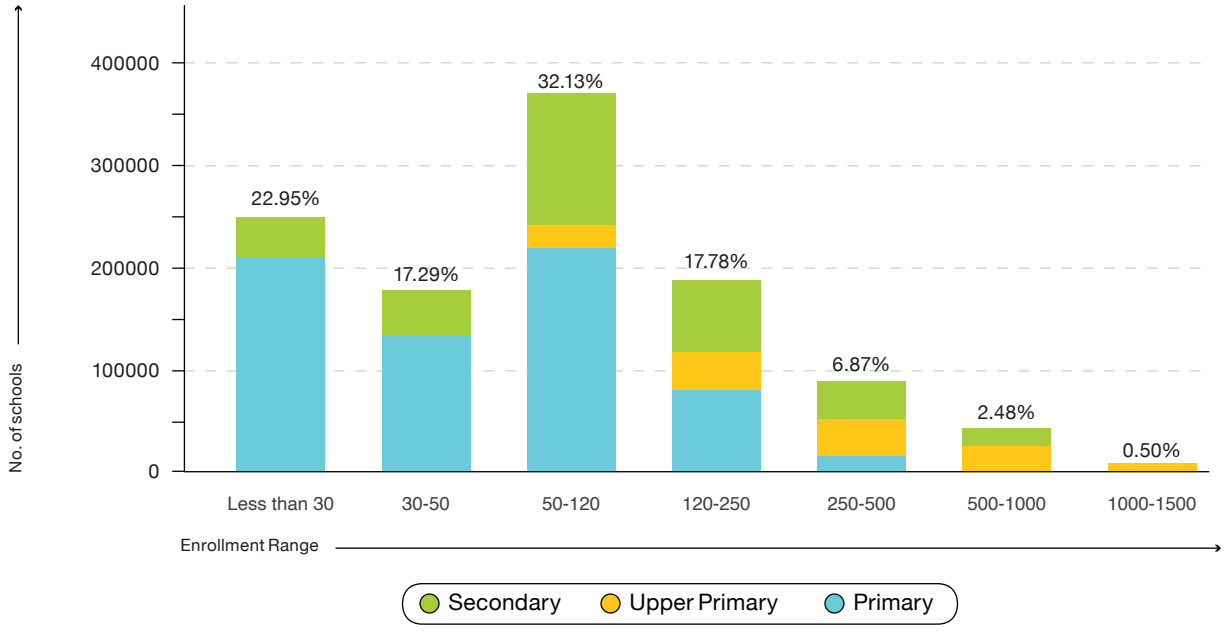
ii. Weak governance due to high span ratios of frontline bureaucrats **(227 schools per BRC and 20 schools per CRC)**[4]

iii. Reduces fiscal capacity and increases cost per child; cost per year per child is **~2.1 times** higher for small schools compared to schools with **100-200 students**[5]

iv. Input focused laws reinforce a pre-existing culture in the system of prioritizing inputs and compliance with rules

~4.3 lakh (43%) schools have an enrollment of less than 50 students[6]

Fig 1.5 Number of schools based on Enrollment Range



Source: UDISE 16-17

1.Mukerji et al (2013) | 2. NEP (2020) | 3. ASER (2018) | 4. MHRD (2010) | 5. CSF State Diagnostics, analysis from one state's data where costs only reflect teacher salaries (which are the biggest component of spending on education) | 6. Analysis using UDISE data (2016-17); Small schools are schools with enrollment less than 50 | The percentage figures are the share of schools in that category as a percentage of total schools

Capacity is low across the system, both in terms of capability and numbers

Availability of resources

Low System capacity as a result of which 71% of DEOs and 42% of BEOs hold dual posts[1]

In **8 of 21 major states** in India- Bihar, Jharkhand, Madhya Pradesh, Uttar Pradesh, Karnataka, Gujarat, Odisha and Maharashtra, there is a **net teacher deficit of ~4.47 lakh teachers** based on RTE's teacher allocation norms.[2]

High vacancies also exist in the middle management layer for which fiscal provision is challenging. On average **39% of sanctioned BEO positions were vacant across 3 states.[3]**

Vacancies increase span ratios and lead to officials holding dual posts thereby stressing an already large and under resourced system.

1

Capacity of existing personnel

Only 7% of candidates pass TET[4] and only half of primary school teachers can complete simple teaching tasks correctly[5]

Teacher quality in primary schools is weak - **four out of ten primary school teachers could not solve a simple grade 4** percentage **problem** correctly - due to challenges at multiple levels.[5]

The quality of applicants for teaching positions is poor as is evident by the **low pass rate (7%)** of the Central Teacher Eligibility Test.[5]

Pre service education programmes are theoretical with limited focus on classroom aspects and pedagogy.[6]

Quality of academic coaching provided to teachers is weak[7]. Only **42% and 52.6% of Head Teachers** said they **were fully satisfied by the support provided by BRCs and CRCs** respectively.[8]

Infrequent and inadequate training provided to block and cluster officials reduces their ability to fulfill their academic monitoring and mentoring functions.[7]

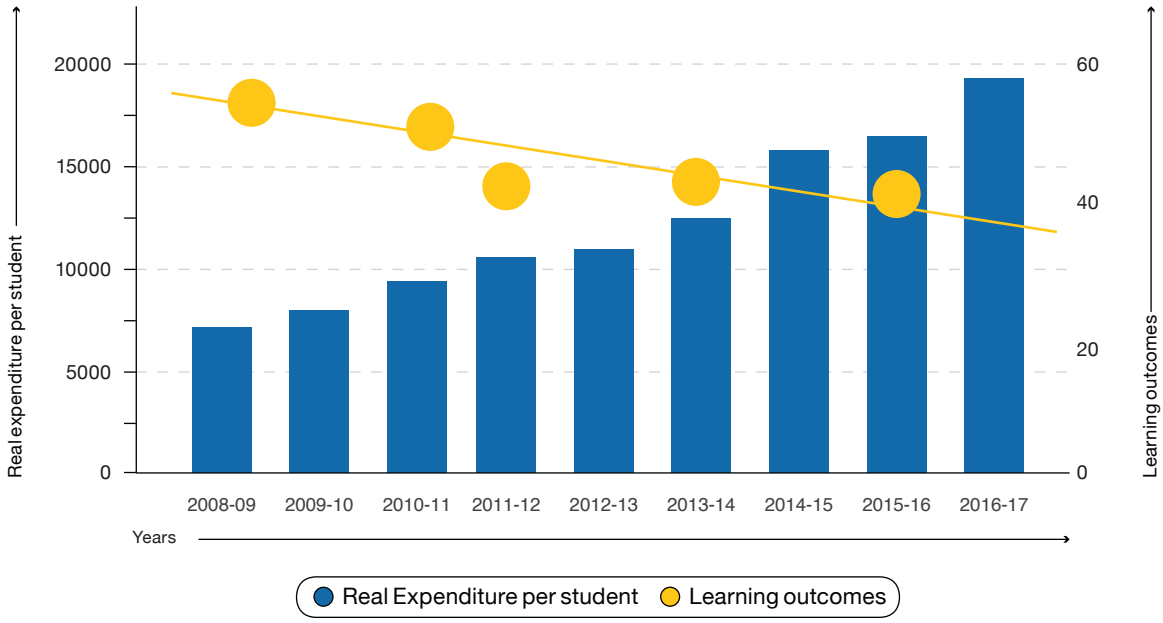
2

1. Bhatty (2016) | 2. Datta et al (2021), Net teacher deficit=excess teachers-teacher vacancies | 3. CSF State Diagnostics, Bhatty (2016) | 4.Young Lives (2013) | 5.Kingdon et al (2007), Bhattacharjea et al (2011) | 6. Justice Verma Commission Report (2012), CSF State Diagnostics, Sailaja (2014) | 7. CSF State Diagnostics | 8. MHRD (2010)

Public Expenditure on education is not driving improvements in learning outcomes

No correlation between expenditure and student outcomes

Fig 1.6 Relationship between government expenditure per student and learning outcomes



Between **2008-09 and 2016-17**, the Government per pupil expenditure in real terms nearly tripled **(2.7 times) from, Rs. 7,245 to Rs 19,233** (real increase keeping 2011 as the base year)[1]

1

However, **during the same 9 year period, % children in Class 5** in Government Schools **who could read a Class 2** level text **declined**[2]

2

The Government Expenditure for elementary education (Centre plus State combined) increased from **80,313 Crore in 2008-09 to 277,832 Crore in 2016-17 (245% increase in nominal terms)**[1]

3

There is limited fiscal space to focus on improving quality of learning (e.g TLM, teacher training, monitoring) as between **79%-95% of the state budget allocations** are focused on teacher salaries, infrastructure, mid day meals and student incentives[3]

4

1. Real analysis based on World bank GDP deflator data keeping 2011 as the base year, Data on Student Enrollment from UDISE and Budget data from MHRD 2008 to 2017: Analysis of Budgeted Expenditure of Education | 2. Learning Outcomes (ASER trends over time)
3. CBGA and CRY (2016), Incentives refer to monetary (scholarships and stipends, education vouchers, assistance to SCs for subsidized hostels) and non monetary incentives (uniforms, textbooks, food materials in hospitals, laptops, bicycles etc) for students

No incentives exist to focus on improving learning in the system and actors view the problem of learning as being outside of their locus of control

Incentives of stakeholders are not aligned to improving learning outcomes

	No incentives exist for teachers and other actors to put in more effort and improve student learning outcomes[1]
	Salaries and promotions of teachers and other actors are based on their tenure in the system. Student performance has no impact on their employment terms
	Deployment and transfer of teachers are dependant on their political influence rather than quality of teaching in classrooms[2]
	Teachers and officials prioritize tasks based on orders from above due to the lack of clearly defined performance metrics in the system[3]

Externalisation of blame and sense of powerlessness among state actors

- Stakeholders perceive the causes of low learning being outside the classroom[4]
- Strong perception among stakeholders that children cannot learn because they come from poor families who are not able to provide adequate support[5]
- 75% of teachers and headteachers in 3 states felt that student learning levels were low because of socio-economic backgrounds of students, lack of parental support and student abilities[6]
- **A strong hierarchical culture exists** in the education system where the focus is on responding to directions from the state or district office. This makes teachers, cluster and block officials feel like they have limited agency[7]

1. Ramachandran et al (2018) | 2. T Beteille et al (2020), Bhatty et al (2016) | 3. Aiyar at al (2016) | 4. Aiyar et al (2015) 5. Bhatty et al (2016) | 6. CSF State diagnostics, Please note that these findings are based on 62 interviews with teachers and headteachers across 3 states and hence may not be considered representative of all teachers in these 3 states | 7. Aiyar at al (2016), Aiyar et al (2015), CSF State diagnostics

Past attempts have shown that a holistic approach is crucial and there are no silver bullets to improving foundational learning outcomes

Siloed interventions have shown no impact

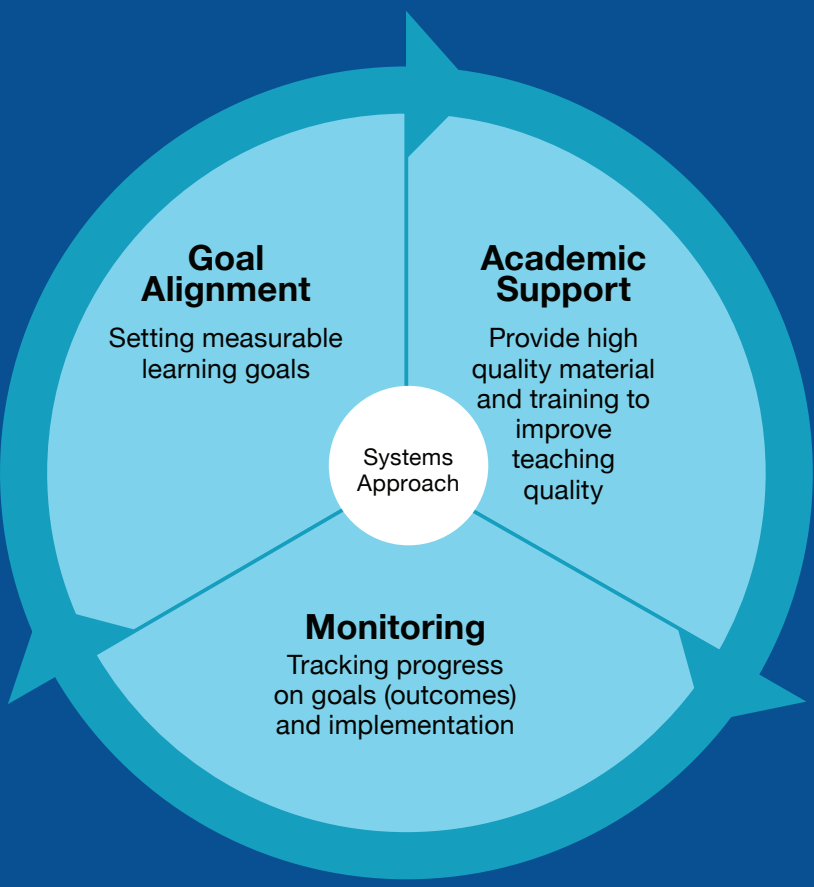
Example 1: Providing TLM without support:

- In rural India, colourful and well designed reading material did not show any impact on learning outcomes when it was used by teachers without additional training and support[1]
- Providing textbooks in Kenya increased test scores of high performing students but had no impact on weaker students[2]

Example 2: Teacher Training programs

- Studies have found no significant positive relationship between teacher training and increase in test scores of students taught by the same teachers[3]

Successful FLN programs have shown that in the short/medium term, FLN outcomes can be improved by focusing on three key areas[4]:



1. Banerjee et al (2011) as cited in Mukerjee et al (2010) | 2. Glewee et al, (2009) as cited in Mukerjee et al (2010) | 3. Muralidharan (2013) | 4. Adapted from Crouch et al (2017)

Focus on 3 key interlinked managerial factors which should be tightly knit together to improve FLN outcomes - Goal Alignment, Academic Support and Monitoring

Goal Alignment

- Set clear, measurable and realistic learning targets
- Align expectations for everyone from teachers, middle management and parents to policymakers to shift focus away from inputs and processes towards achieving learning targets

Academic Support

- Provide structured pedagogy tools - teacher guides with lesson plans tightly aligned to learning outcomes, textbooks, workbooks and assessments[1]
- Ensure that TLM (e.g textbooks, workbooks) and instructional design caters to multigrade and multi level scenarios[2]
- Provide teachers with effective training to use tools and improve pedagogical practices[3]
- Leverage blended approach for trainings to minimize dilution through cascade

Monitoring

- Improve quality of existing monitoring tools to track quality of teaching and student progress against FLN goals
- Conduct training effectiveness assessments to diagnose gaps in design and delivery
- Make reliable data a salient goal and set up processes to improve data integrity[4]
- Use data for regular diagnosis, support and course correction

Maximum improvement in outcomes is possible by focusing on management factors in the short to medium term as seen from successful programs in India and globally

1. Snilstvei et al (2015) | 2. TARL and Madhi Foundation's multigrade teaching strategies | 3. Piper et al (2018) Evaluation of PRIMR in Kenya showed that the combination of teacher PD, teacher instructional support and coaching along with student books and structured lesson plans was most effective in improving outcomes | 4. Berkhout et al (2020)

Set clear measurable learning goals & communicate them to all stakeholders

Example: Mission Prerna in Uttar Pradesh

मिशन प्रेरणा

प्रेरणा लक्ष्य

भाषा

कक्षा 1	निर्धारित सूची में से **5** शब्द सही से पहचान लेते हैं
कक्षा 2	अनुच्छेद को **20** शब्द प्रति मिनट के प्रवाह से पढ़ लेते हैं
कक्षा 3	अनुच्छेद को **30** शब्द प्रति मिनट के प्रवाह से पढ़ लेते हैं
कक्षा 4	छोटे अनुच्छेद को पढ़कर **75%** प्रश्नों को सही हल कर पाते हैं
कक्षा 5	बड़े अनुच्छेद को पढ़कर **75%** प्रश्नों को सही हल कर पाते हैं

गणित

कक्षा 1	निर्धारित सूची में से **5** संख्याएं सही से पहचान लेते हैं
कक्षा 2	जोड़ एवं घटाना (एक अंकीय) के **75%** प्रश्नों को सही हल कर पाते हैं
कक्षा 3	जोड़ एवं घटाना (हासिल के साथ) के **75%** प्रश्नों को सही हल कर पाते हैं
कक्षा 4	गुणा के **75%** प्रश्नों को सही हल कर पाते हैं
कक्षा 5	भाग के **75%** प्रश्नों को सही हल कर पाते हैं

प्राथमिक विद्यालयों के सभी छात्र 2022 तक प्रेरणा लक्ष्य हासिल करें

Channels identified

- Divisional Workshops
- WhatsApp groups
- State Video
- Press Relese
- LED Vans
- Classroom Walls
- IVR Calls

Key Considerations

1. Set clear, measurable and realistic learning targets
2. Learning goals should be widely shared, understood and reinforced at district, middle management, school and community level

Tools such as structured lesson plans and other learning material linked with training and monitoring can improve pedagogical practices

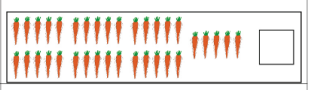
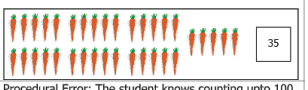
Example: Structured Pedagogy Toolkit developed by CSF

Learning Outcomes Framework

NCERT TEXTBOOK (Math Magic)	I. NCERT Chapter Wise LOs (mapped by CSF)	LO #	LOs Description	ICAP Video	DIKSHA Topic Concepts
Chapter 5: Numbers from 10-20 (Section on Number Sense)	Decomposing numbers in 10s and 1s pictorially	G1.NumberSense.PlaceValue.1	(a) Understands that the two digits of a two-digit number represent amounts of tens and ones, concretely (e.g. blocks) and pictorially (e.g. charts) (10-20);	C4.VT1. Making bundles of 10s and counting 10-20	
Chapter 5: Numbers from 10-20	Understanding grouping by 10 to introduce numbers 10-20 Group Objects corresponding to the given number	G1.NumberSense.Counting.3	Reciting number names in standard order (10-20); Matches objects with correct number; Groups objects / draw pictures of things corresponding to a number (10-20)	C4.VT2. Introducing place value for numbers 10-20	
Chapter 5: Numbers from 10-20	Writing numbers 10-20	G1.NumberSense.Reading&WritingNumber2	Recognises and writes number correctly (10-20)	C4.VT2. Introducing place value for numbers 10-20	
Chapter 5: Numbers from 10-20	Decomposing numbers in 10s and 1s numerically	G1.NumberSense.PlaceValue.1	(b) Composes and decomposes two digit numbers symbolically (e.g., 17=10+7)	C5VT1. Making bundles of 10s and counting 10-20 C5.VT2. Introducing place value for numbers 10-20	Addition
Chapter 5: Numbers from 10-20	Comparing groups (more/ less) Comparing numbers (big or small)	G1.NumberSense.NumberComparison.1	Identifies whether one group/number is greater than, less than, or equal to the number of objects in another group/number, e.g., by counting strategies; Draws equal number of objects across the = symbol (10-20)	C5.VT3. Ordering and comparison of numbers 10-20	Practice for Numbers
Chapter 5: Numbers from 10-20		G1.NumberSense.Counting.9	Develops fluency in number facts upto number 20 (e.g. number families; quick count of fingers lifted)	Not covered	

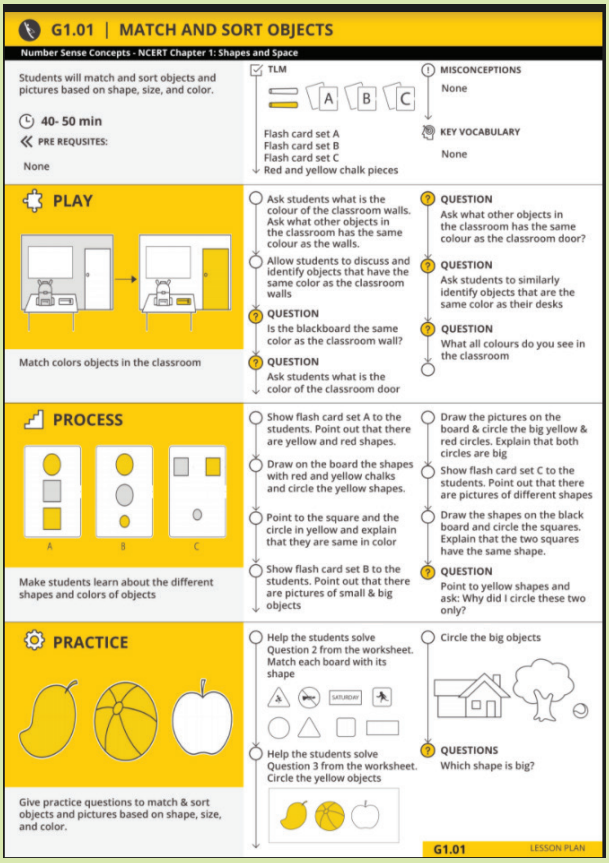
A sharply defined "Learning Outcomes" framework detailed into **"Micro Level Learning Competencies"** mapped to national & international standards

Assessments for Revision and Remediation

Item No.	1
Subject	Math
Grade	G1
Domain	A. Number Sense
Competency	2. Counting
FLN Assessment Milestone	Count numbers from 1 to 100 (cardinality and ordinality-concrete and pictorial)
Assessment/Practice/Remedial	Assessment
Difficulty level	Easy
Q Stem	Count and write the number in the box. 
Solution	
Possible Error Type	Procedural Error: The student knows counting upto 100 but he could not associate numbers to objects. Factual Error: The student could not count 1-100 with fluency.

Easy to Use, Valid and Reliable Assessments for diagnostic, progress tracking, revision and remediation

Structured Lesson Plans with Practice Worksheets



Detailed **Lesson Plans in Teacher Manuals, TLMs** and Worksheets embedding **Science of Learning**

Key Considerations

1. Provide teachers with tools in the form of structured guides or lesson plans to raise the quality of teaching
2. Ensure tight alignment between learning goals, teacher guides, textbooks, student workbooks and assessments
3. Teaching learning material (textbooks, student workbooks etc) and instructional design should cater to multigrade classrooms

Provide teachers training to use tools and improve instructional practices

Examples of Blended Courses through digital training platforms

CM Rise in MP

National Teacher Training platform

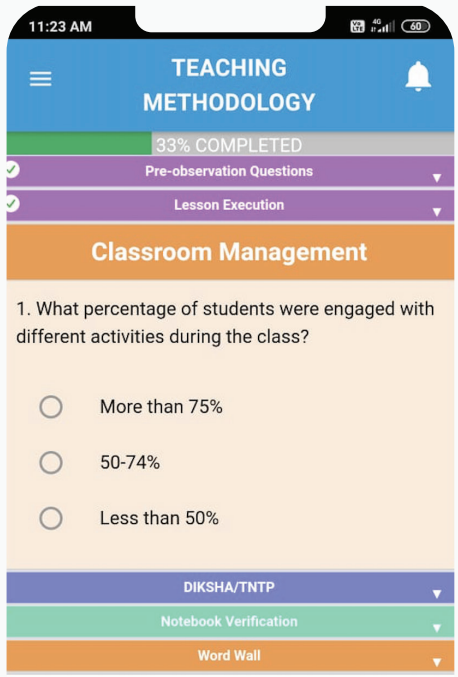
LLF's "Ek Varshiya Prarambhik Bhasha Shikshan Course"

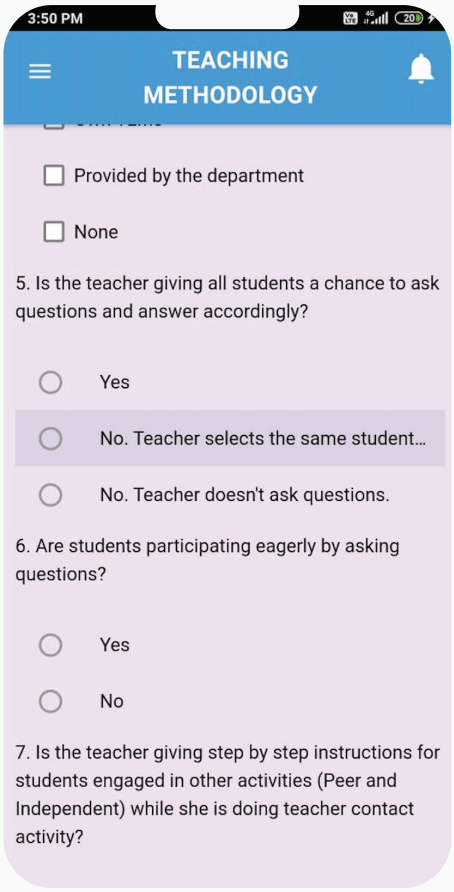
Key Considerations

1. Build teacher capacity through training programmes on foundational learning
2. Use a blended training approach for continuous professional development of teachers and middle management
3. Cluster and Block Resource Persons should be provided training on effective strategies for coaching and mentoring teachers

Refine monitoring tools and protocols to focus on tracking practices and outcome; improve data quality to enable informed decision making

Example: Tamil Nadu's TNVN Monitoring App





MADHI — Foundational learning first, so every child can thrive.

Cisco Corporate Social Responsibility

SHAKTI — Transforming education, with the power of data

Key Considerations

1. Refine existing monitoring tools (apps/forms etc) and protocols to track classroom practices and student learning levels
2. Build in data reliability checks to improve integrity and quality of assessment and monitoring data
3. Use data collected from monitoring visits to provide targeted support to teachers

To sustain improvement in learning outcomes, focus on making learning visible and building systemic capacity to achieve learning goals

Make learning visible in primary grades through competency based key stage assessments

- Implement NEP's recommendation on conducting low stakes key stage assessments for grades 3 and 5 (e.g competency based assessments in Mexico, Chile, UK and Australia[1])
  - Test performance on key competencies that help schools move away from rote memorization
  - Shift the culture of the system to focus on reliable data collection by setting up processes for audits (including social audits) and leveraging technology
- Share information on school quality and student performance with parents and schools[2]

Improve quality of personnel management and use existing funds strategically to achieve goals

- Improve teacher capacity through pre-service education reforms that focus on pedagogy and provide extensive exposure to practical training[3]
- Consider merging small schools with large schools or splitting grades among school campuses wherever feasible with the support of the community (through an opt in model) to reduce multigrade teaching, reduce span ratios of middle management and improve quality of expenditure
- Increase incentives for actors to focus on improving foundational learning levels and energize the system through recognition and rewards
- Improve existing indices like SEQI and PGI by increasing weightage for learning outcomes and retaining only those governance indicators that can be reliably measured and have a known impact on outcomes

1. Reviews of national policies for education chile 2004 OECD, How Chile combines competition and public funding, The Economist | 2. Afridi et al (2017) and Andrabi et al (2014) | 3. Muralidharan (2019)

Examples of NGO-led programs in India & other developing countries have shown positive impact

NGO led service delivery programs in partnership with school systems

Room to Read's literacy program for grades 1 and 2

States: Chhattisgarh, Rajasthan and Uttarakhand
Scale: 3,020 schools

Care India's Literacy program for grades 1-4

States: Odisha and UP
Scale: 1,000 schools

Pratham's Teaching at The Right Level remedial program for grades 3-5

States: Haryana, Bihar and Uttar Pradesh
Scale: 39,494 children

Global System reform FLN Programs with evidence of impact on FLN outcomes

Kenya's Tusome Program

The Government launched a program across all 24,000 primary schools that integrated pedagogy (teaching and learning materials) and governance interventions (teacher professional development, coaching and monitoring) to improve literacy outcomes for children in grades 1-3

Reducing learning poverty through System Reform in Ceara, Brazil

The preform strategy was focused around 5 key pillars of technical support, incentives, political leadership, devolution of autonomy and accountability and regular monitoring of learning

Glossary

ASER	Annual Status of Education Report
BEO	Block Education Officer
BRC	Block Resource Coordinator
CRC	Cluster Resource Coordinator
DEO	District Education Officer
FLN	Foundational Literacy and Numeracy
HM	Headmaster
MDM	Mid Day Meal
NAS	National Achievement Survey
NCERT	National Council of Educational Research and Training
NIPUN	National Initiative for Proficiency in Reading with Understanding and Numerac
NEP	National Education Policy
PGI	Performance Grading Index
PTM	Parent Teacher Meeting
RTE	Right to Education
TET	Teacher Eligibility Test
TLM	Teaching Learning Material
TNVN	Tamil Nadu Vagupparai Nokkin (Translate to: look inside a classroom)
UDISE	Unified District Information System for Education
SEQI	School Education Quality Index
SMC	School Management Committee
SDP	School Development Plan

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