CENTRAL SQUARE FOUNDATION

School Education in India

Data, Trends, and Policies

About the organisation
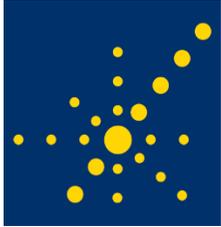
Central Square Foundation (CSF) is a non-profit organisation working towards ensuring quality school education for all children in India. Since 2012, CSF has partnered with the government, the private sector, non-profit organisations, and other ecosystem stakeholders to improve the learning outcomes of children, especially from low-income communities. CSF is driven by its mission to enable the school education system to adopt solutions that are scalable, sustainable and effective so that all children get equal access to opportunities needed for leading a better life.

To learn more, please visit http://www.centralsquarefoundation.org/

NOTE FROM CENTRAL SQUARE FOUNDATION

From the new National Education Policy (NEP) 2020 to India's plans to appear for PISA in 2022, this is a big moment for the country on the education front. The next few steps will be crucial for the learners of today and tomorrow ; research and evidence should inform the tools and metrics that will be used to improve the quality of education.

Based on emerging trends, available evidence, and recent policy developments, this report provides a holistic view of the school education system in India. We at CSF developed this report to fill the need of a one-stop source on school education that collates and analyses relevant resources. It aims to be a ready reckoner for policymakers, researchers, philanthropists and practitioners among other stakeholders associated with the sector.

Ashish Dhawan
Founder Chairman
Central Square Foundation

We were working on this report when India went under lockdown to limit the spread of the novel coronavirus. Schools were no exception to the lockdown, and imparting education in these circumstances became a pressing concern. Everyone from the governments to parents turned to tech-enabled resources for continued learning — the crisis was a sputnik moment for EdTech. The report dives into the EdTech initiatives implemented at scale by some state governments which can be useful to assess how appropriate EdTech solutions can be deployed and integrated in schools in the long run.

The report also looks at how setting up of an independent regulatory body for assessment and accreditation of private schools, as suggested in the NEP 2020, can help create an enabling environment for these schools. After all, we will truly achieve our aspirations only if learning outcomes among students attending private schools improve too.

Today's children will join the workforce in 2030, and to reap the benefits of the demographic dividend then, all stakeholders need to start working together to accomplish the common goal of improved student learning.

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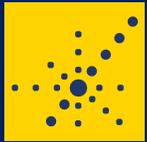
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Education Data and Trends

List of abbreviations

AEC: Adult Education Centre
ASER: Annual State of Education Report
AWC: Anganwadi Centre
BEO: Block Education Officer
BRC: Block Resource Centres
CBSE: Central Board of Secondary Education
CRC: Cluster Resource Centres
DCF: Data Collection Form
DIET: District Institute of Education and Training
DIKSHA: Digital Infrastructure for Knowledge Sharing
ECCE: Early Childhood Care and Education
ETB: Energised Textbooks
FLN: Foundational Literacy and Numeracy
GDP: Gross Domestic Product
GER: Gross Enrolment Ratio
GSDP: Gross State Domestic Product
KRP: Key Resource Persons
MHRD: Ministry of Human Resource Development
MIS: Management Information System
MOE: Ministry of Education
NAS: National Achievement Survey
NCERT: National Council of Educational Research and Teaching
NCF: National Curriculum Framework

NCTE: National Council for Teacher Education
NEP: National Education Policy, 2020
NGO: Non-government Organisation
NIEPA: National Institute of Educational Planning and Administration
NISHTHA: National Initiative for School Heads and Teachers' Holistic Advancement
OBC: Other Backward Communities
PGI: Performance Grading Index
PISA: Programme for International Student Assessment (PISA)
pp: percentage point
PTR: Pupil Teacher Ratio
RTE: Right of Children to Free and Compulsory Education
SC: Scheduled Castes
SCERT: State Council of Educational Research and Training
SEQI: School Education Quality Index
SEZ: Special Education Zones
SMC: School Management Committees
SSA: Sarva Shiksha Abhiyan
SSSA: State School Standards Authority
ST: Scheduled Tribes
UDISE: Unified District Information System for Education
URG: Under Represented Groups

Part A: Education Data and Trends

With over **15 lakh schools, 92 lakh teachers and 25 crore student** enrollments, India is home to the largest and most complex education system globally. This section provides a data backed insight into this system along the following lines:

Trends in number of schools, students and teachers

Share of management types and rural-urban variation

Learning outcomes

Budget expenditure

> The intent is to provide a ready reference to data enthusiasts in the school education sector. Reference period of data analysis ranges between 2013 and 2018, data sources on the next slide.

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Data Sources and Reports

▶ UDISE[1] 2013 to 2018

▶ Education Statistics at a Glance 2005-06, 2015-16

▶ Economic Survey of India

▶ NAS 2017

▶ ASER 2018

▶ Union Budget 2013-14 to 2019-20

[1]UDISE does not cover all of the 'unrecognised' private unaided schools, leading to an under-estimation in the true size of the private school sector

Introduction

India, with 25 crore children enrolled in 15 lakh schools, has the largest school education system globally

▶ This figure has remained fairly consistent in the period between 2013 and 2018

Number of schools

| | 2013-14 | 2014-15 | 2015-16 | 2016-17 | 2017-18 |

Enrollment

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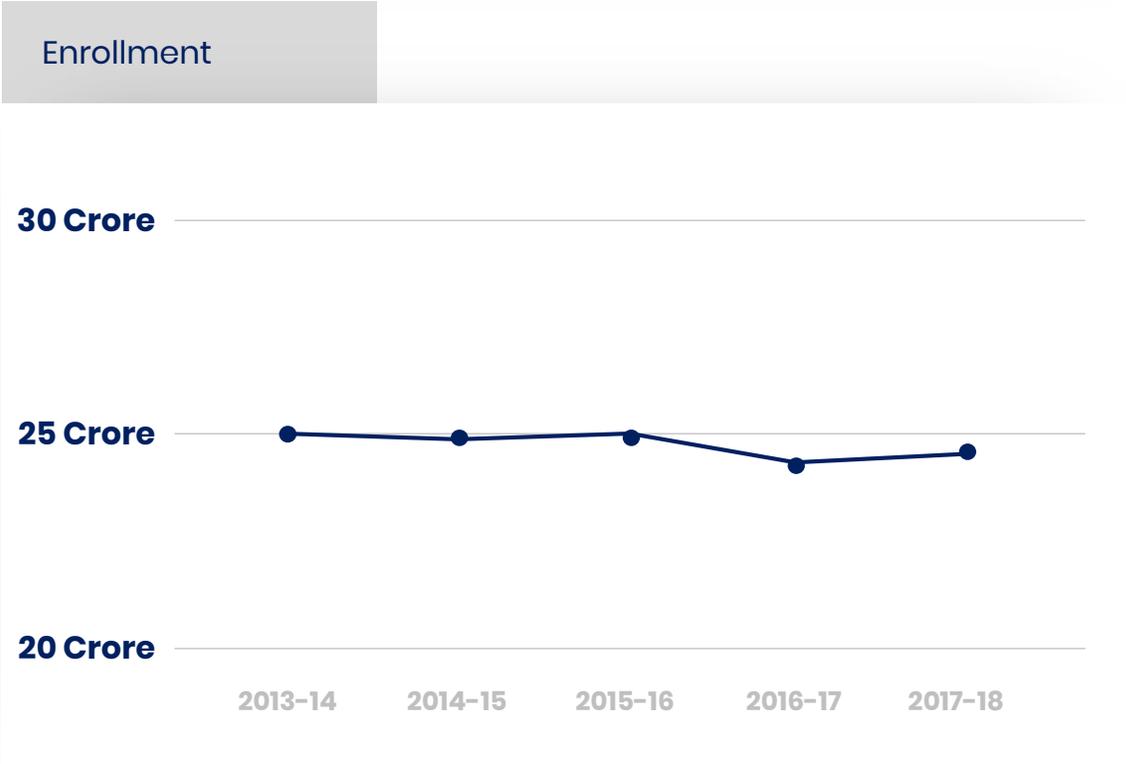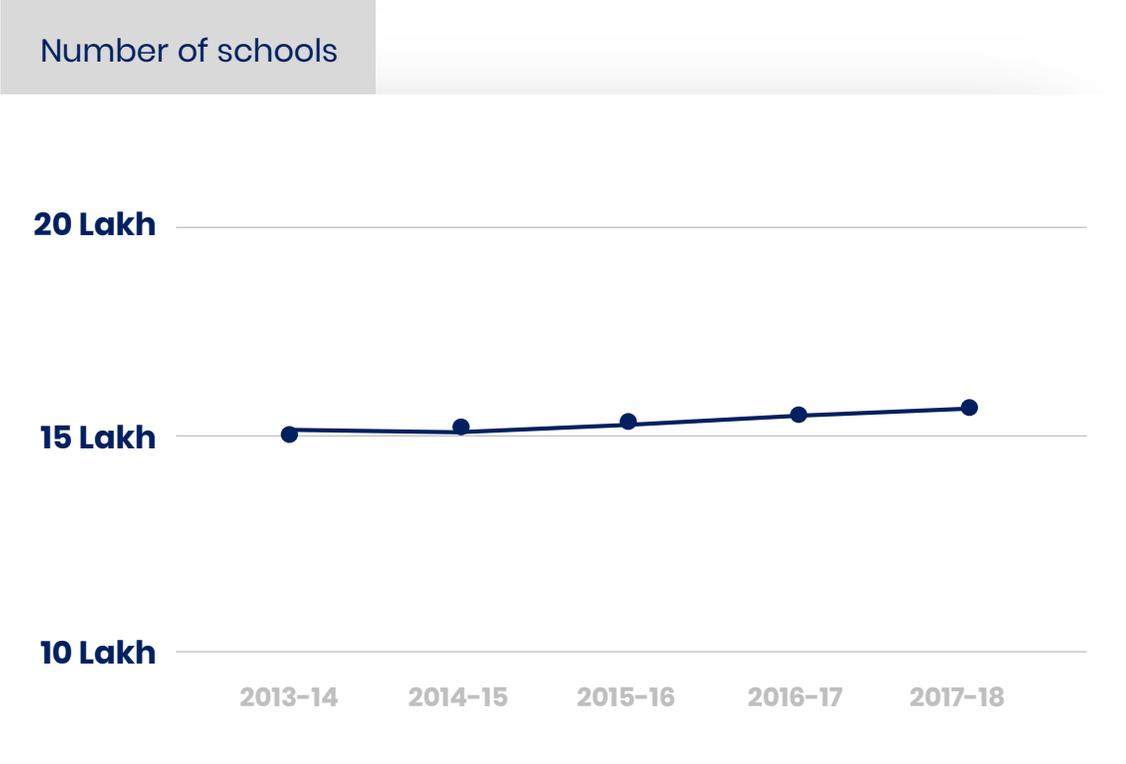
Half of India's school going population is in primary grades

Enrolment by level of education (2017-18)

12.2 Cr	6.5 Cr	3.8 Cr	2.5 Cr	25.1 Cr
Primary	Upper Primary	Secondary	Higher secondary	Total

Source: UDISE
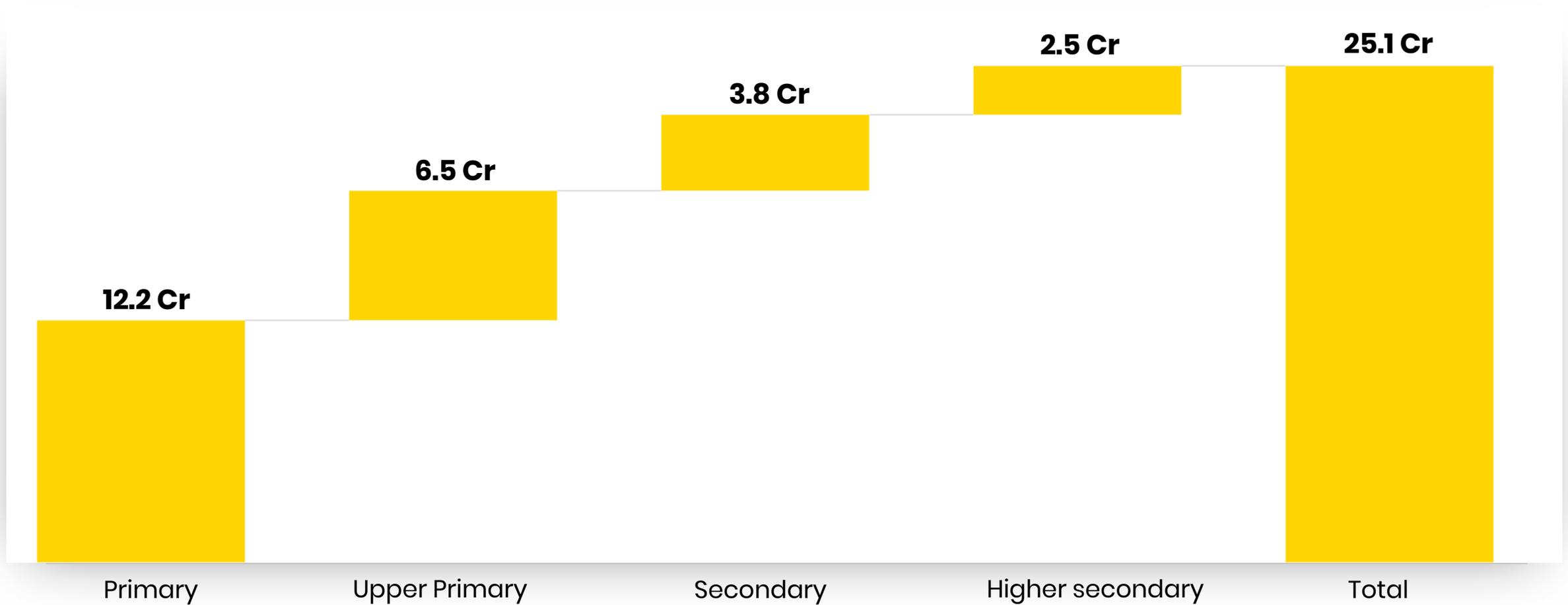
Primary grade enrollment witnessed steady decline from 2013 to 2018

▶ This observation is in line with the Economic Survey of India 2018-19

▶ The survey notes that India is set to witness a sharp slowdown in population growth in the next two decades. The 0-19 age bracket has already peaked due to sharp decline in total fertility rates (TFR) across the country

▶ The southern states, Himachal Pradesh, Punjab, West Bengal and Maharashtra have fertility rates well below the replacement rate

Enrolment by level of education

Legend: ■ Primary ■ UP ■ Secondary ■ Higher Sec

Y-axis: 0, 2 Cr, 4 Cr, 6 Cr, 8 Cr, 10 Cr, 12 Cr, 14 Cr

X-axis: 2013-14, 2014-15, 2015-16, 2016-17, 2017-18
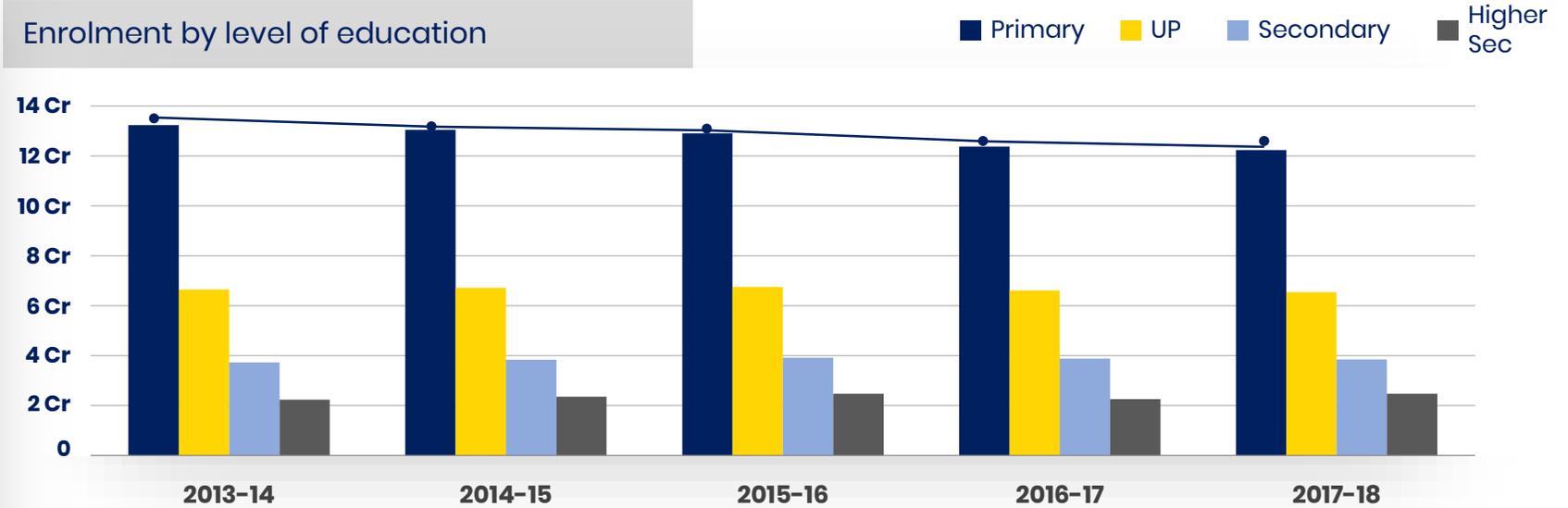
Annual population growth rate in India (%)

Y-axis: 0, 0.5, 1.0, 1.5, 2.0, 2.5

X-axis: 1941-51, 1951-61, 1961-71, 1971-81, 1981-91, 1991-01, 2001-11, 2011-21

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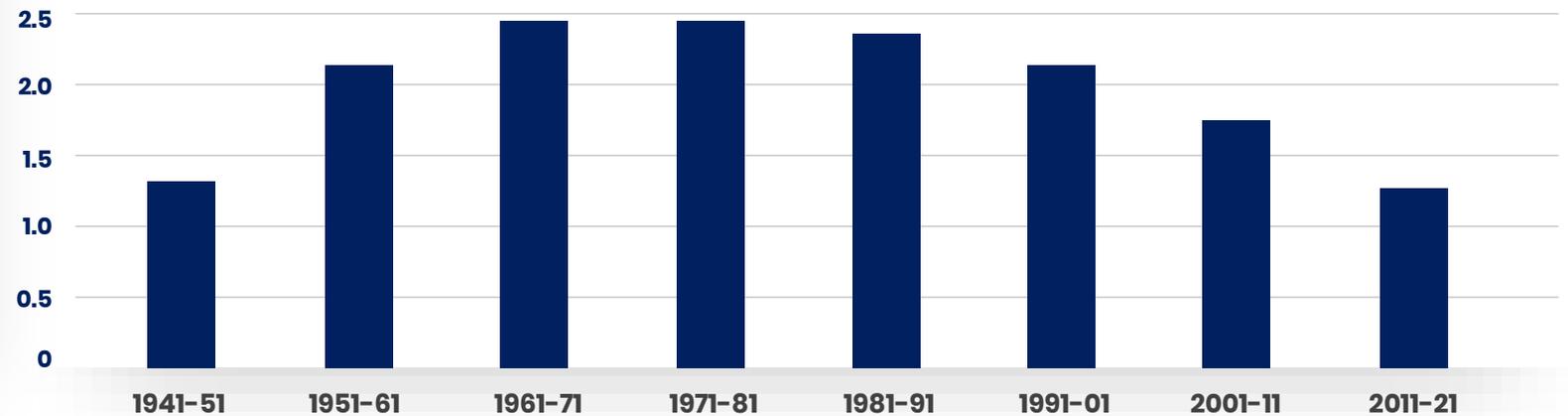
More students dropout of school as they progress across grades

While near-universal enrollment has been achieved at the elementary level (grade 1-8), the enrollment consistently falls with successive levels of education

However, GER at the upper primary (92.8%), secondary (80%) and senior secondary (56.2%) levels have increased in the period between 2008 and 2015

Enrolment by level of education

2008-09 ■   2015-16 ■

114%
99%
80%
93%
60%
80%
35%
56%

Grade 1-5   Grade 6-8   Grade 9-10   Grade 11-12

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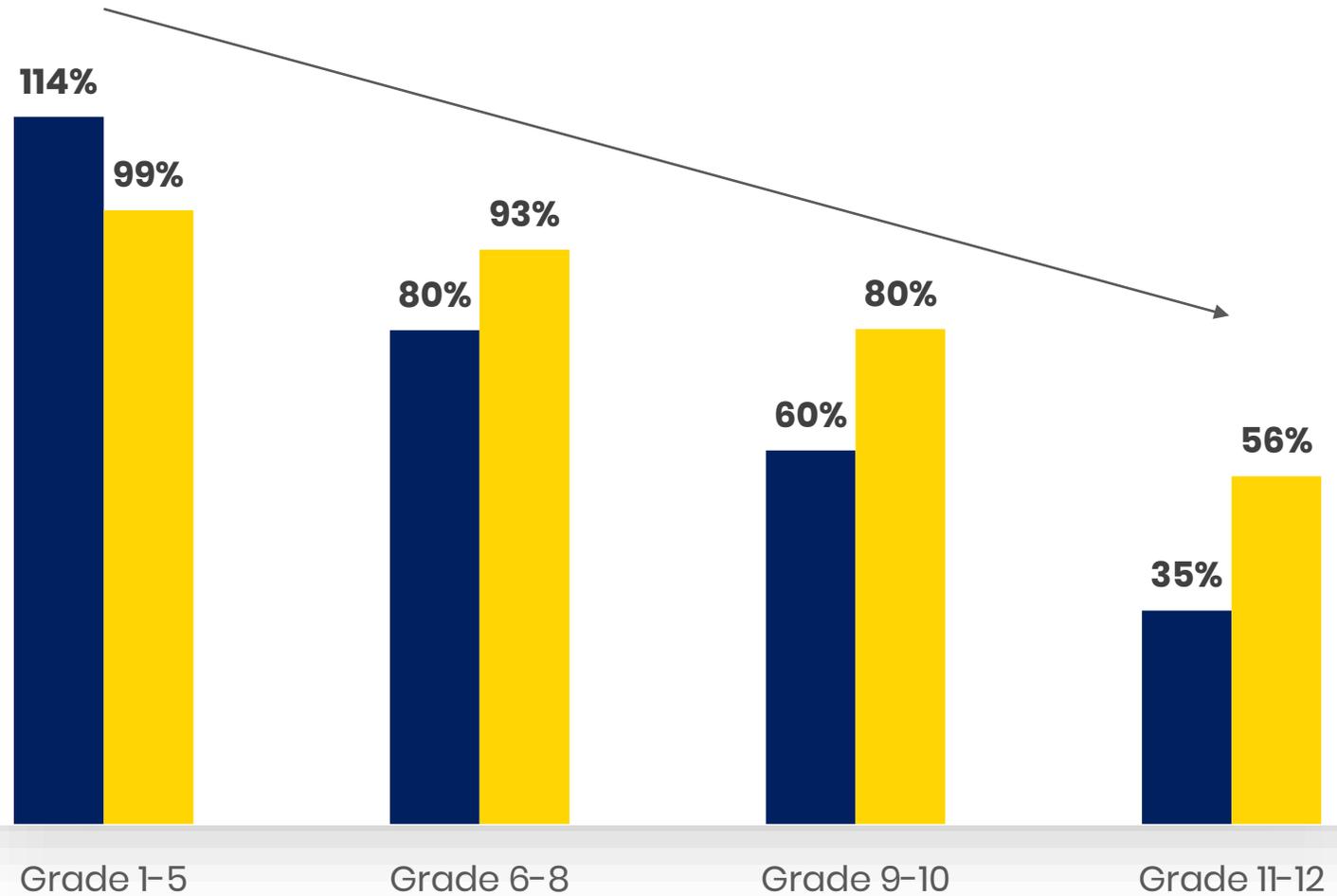
Access to education appeared uniform across gender*, SC, ST

▶ Gross enrollment rate for girls is at par or higher than boys at all levels of education

Boys ■ **Girls** ■

Gross enrollment rate (All)

	Primary	Upper Primary	Secondary	Higher Secondary
Boys	97.9	88.7	79.2	56
Girls	100.7	97.6	81	56.4

Gross enrollment rate (SC)

	Primary	Upper Primary	Secondary	Higher Secondary
Boys	109.5	97.8	83.9	55.8
Girls	112.4	107.7	86.9	58

Gross enrollment rate (ST)

|	Primary	Upper Primary	Secondary	Higher Secondary
Boys	107.8	95.4	73.7	43.8
Girls	105.7	98.2	75.4	42.4

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# Girls enrollment appears to have improved across all education levels

▶ There is a stark improvement in the gross enrollment rate for upper primary, secondary and higher secondary schools

2005-06 ■   2015-16 ■

Gross enrollment rate (All)

Level	2005-06	2015-16
Primary	105.7	100.7
Upper Primary	66.4	97.6
Secondary	46.2	81
Higher Secondary	25.2	56.4

Gross enrollment rate (SC)

Level	2005-06	2015-16
Primary	110.2	112.4
Upper Primary	65.1	107.7
Secondary	40.3	86.9
Higher Secondary	20.9	58

Gross enrollment rate (ST)

Level	2005-06	2015-16
Primary	121.1	105.7
Upper Primary	64.9	98.2
Secondary	33	75.4
Higher Secondary	13.1	42.4

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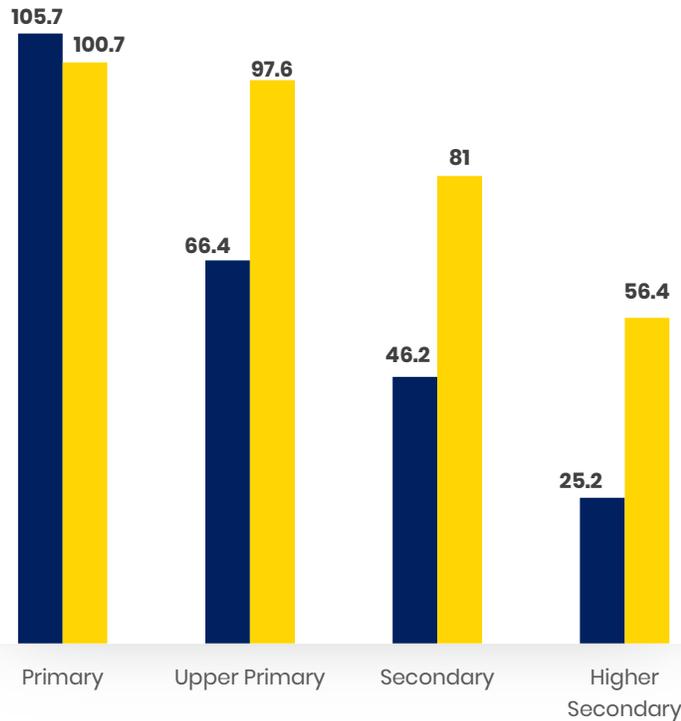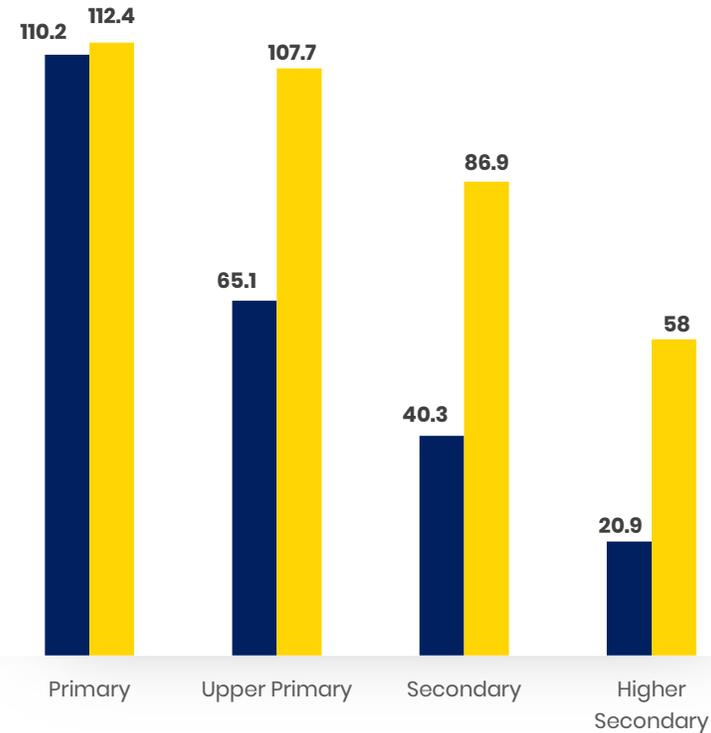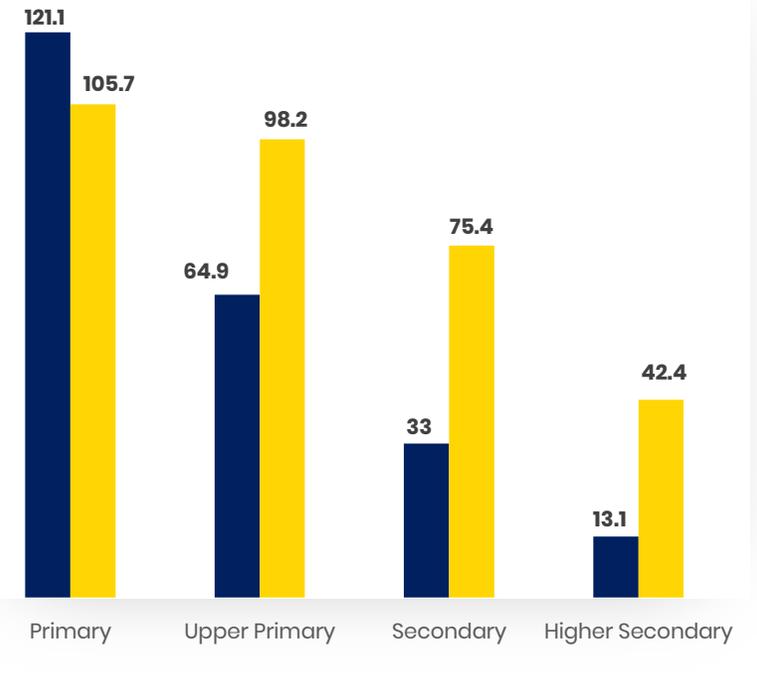
There has been a rise in number of teachers in the period between 2013 and 2018

▶ The total number of teachers grew from **82 lakhs to 92 lakhs** in this period

Number of Teachers (5 year trend)

82,49,743	85,26,505	86,35,123	88,43,813	92,54,929
2013-14	2014-15	2015-16	2016-17	2017-18

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Source: UDISE

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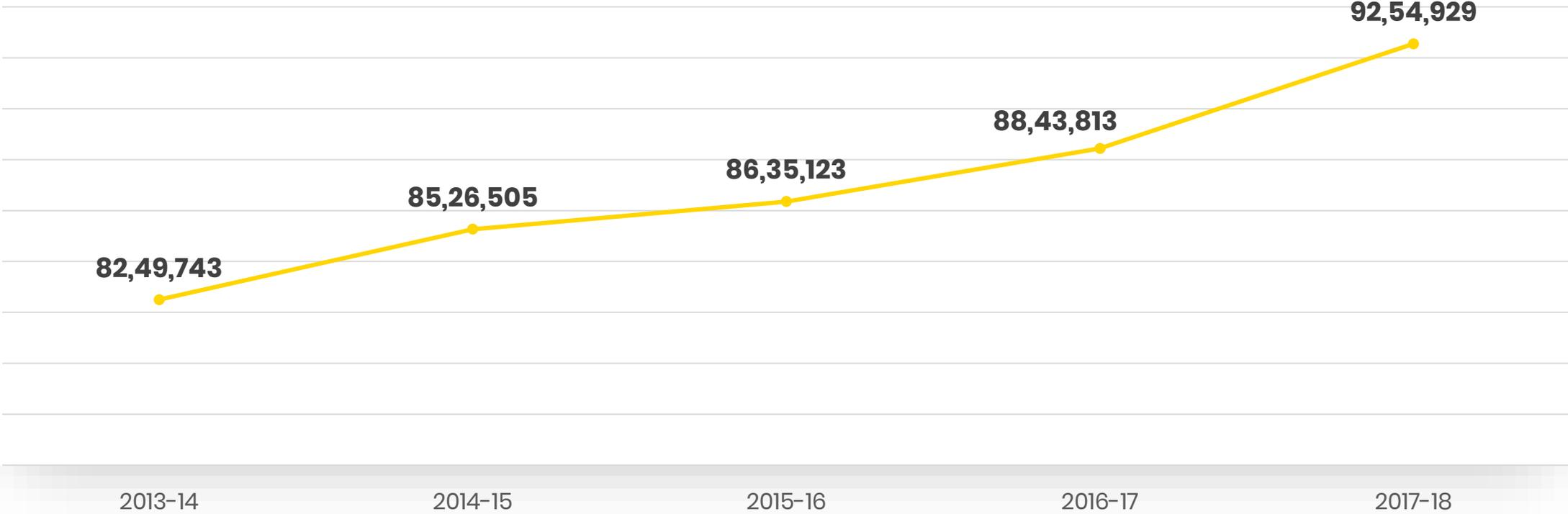
Decline in pupil-teacher ratio (PTR) from 31 to 27 pupils per teacher

▶ For most of the states, the PTR has been well below or close to the ideal PTR (30:1) as stated by the Right to Education Act

▶ Bihar, followed by Uttar Pradesh and Jharkhand are three states that have observed steepest decline in their PTRs over the years. These states witnessed a rise in number of teachers but also a decline in student enrollment in this period

▶ Karnataka is the only state where PTR increased (by 1.3) in this five-year period

Pupil Teacher Ratio (National Level)

2013-14	2014-15	2015-16	2016-17	2017-18
31.3	30.4	30.2	28.4	27.1
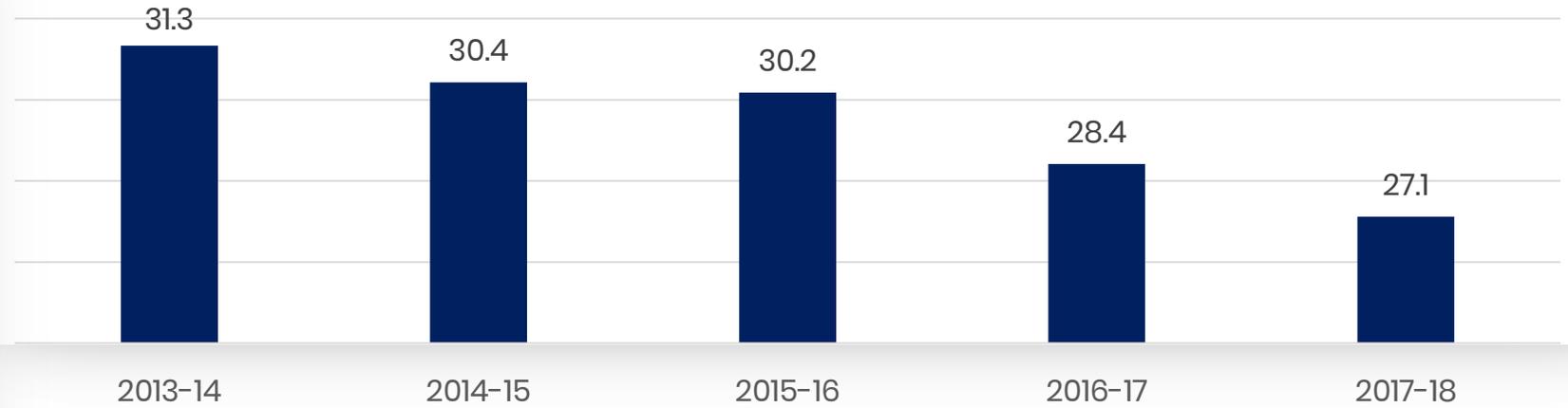
Change in PTR (2017-18 v 2013-14)

State	Change
Karnataka	1.3
Telangana	-0.7
Andhra Pradesh	-1.0
Kerala	-1.0
Maharashtra	-1.3
Chhattisgarh	-2.1
Jammu & Kashmir	-1.6
Himachal Pradesh	-2.4
Assam	-3.3
Gujarat	-3.6
Punjab	-3.7
Orissa	-4.0
Tamil Nadu	-4.8
Uttarakhand	-4.8
West Bengal	-5.2
Haryana	-5.6
Madhya Pradesh	-6.2
Jharkhand	-9.6
Uttar Pradesh	-10.5
Bihar	-11.5
Meghalaya	-0.2
Mizoram	-0.4
Goa	-0.5
Sikkim	-3.2
Tripura	-3.4
Manipur	-3.9
Arunachal Pradesh	-4.7
Nagaland	-5.0
Andaman & Nicobar Islands	-1.3
Chandigarh	-2.9
Lakshadweep	-3.6
Delhi	-2.2
Puducherry	-3.7
Dadra And Nagar Haveli	-5.1
Daman & Diu	-5.3

■ Large state   ■ Small state   ■ UT

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Decline in number of schools with zero or one teacher

- Among large states, Andhra Pradesh, Jharkhand and Madhya Pradesh have the highest proportion of zero or one teacher schools

- 25% of schools in Arunachal Pradesh have zero or just one teacher

- Chandigarh, Dadra and Nagar Haveli, Lakshadweep and Puducherry are the only states where no school had less than two teachers

% of schools which have 0 or 1 teacher

State	%
Andhra Pradesh	18.90%
Jharkhand	17.20%
Madhya Pradesh	16.30%
Uttaranchal	14.40%
Telangana	13.40%
Karnataka	12.40%
Rajasthan	10.50%
Chhattisgarh	9.80%
Himachal Pradesh	8.20%
Uttar Pradesh	7.30%
Jammu & Kashmir	6.10%
Bihar	4.70%
Assam	4.20%
Maharashtra	3.50%
West Bengal	3.30%
Orissa	2.50%
Kerala	2.20%
Tamil Nadu	2.20%
Gujarat	2.00%
Haryana	2.00%
Punjab	0.00%
Goa	15.50%
Manipur	8.40%
Meghalaya	7.10%
Mizoram	2.50%
Nagaland	0.70%
Sikkim	0.50%
Tripura	10.00%
Daman & Diu	18.90%
Andaman & Nicobar Islands	2.10%
Delhi	1.00%
Chandigarh	0.30%
Dadra And Nagar Haveli	0%
Lakshadweep	0%
Puducherry	0%

Legend: Large state · Small state · UT

Number of schools having zero or one teacher

| Year	Number
2013-14	1,40,652
2014-15	1,36,411
2015-16	1,34,688
2016-17	1,30,812
2017-18	1,26,725

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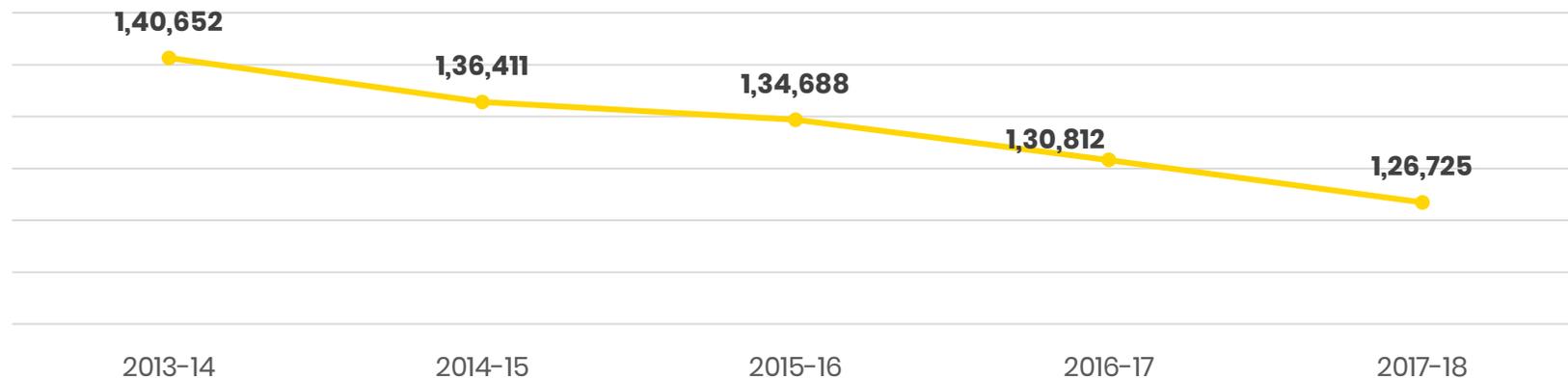
Rural vs. Urban

Majority of India's 15 lakh schools are in rural areas accounting for 85% of all schools

▶ The percentage share of rural (85%) and urban (15%) schools has remained consistent between 2013 and 2018

Number of schools – Rural vs Urban

Rural ■ Urban ■

Year	Rural	Urban
2013–2014	12.91 L	2.26 L
2014–2015	12.87 L	2.29 L
2015–2016	12.89 L	2.32 L
2016–2017	12.97 L	2.38 L
2017–2018	13.11 L	2.46 L

Number of schools (%) – Rural vs Urban

Rural ■ Urban ■

Year	Urban	Rural
2013–2014	14.9%	85.1%
2014–2015	15.1%	84.9%
2015–2016	15.3%	84.7%
2016–2017	15.5%	84.5%
2017–2018	15.8%	84.2%

Source: UDISE

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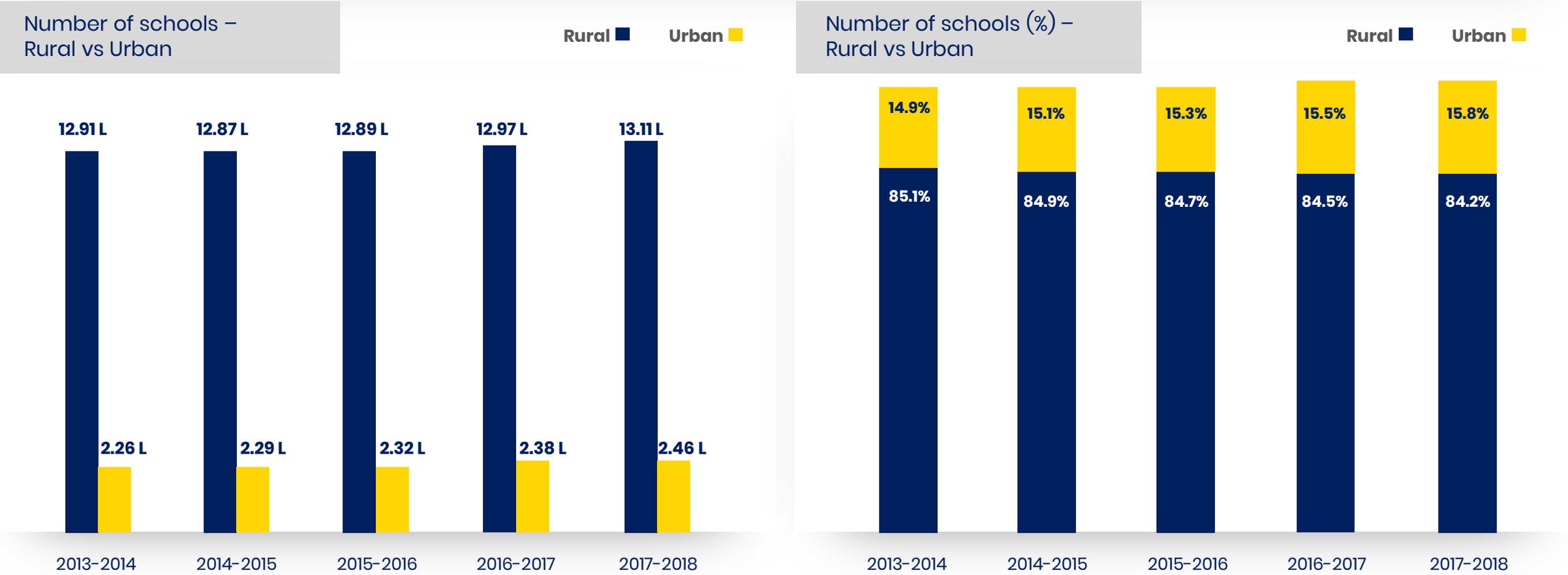
Number of schools and student enrollment higher in rural locations

▶ Rural locations constitute 85% of schools and 71% of enrollment in the country

Number of Schools – By location (2017-18)

Rural	Urban	Total
85%	15%	
13.11 L	2.46 L	15.58 L

Number of Students – By location (2017-18)

Rural	Urban	Total
71%	29%	
17.80 Cr	7.28 Cr	25.09 Cr

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Source: UDISE
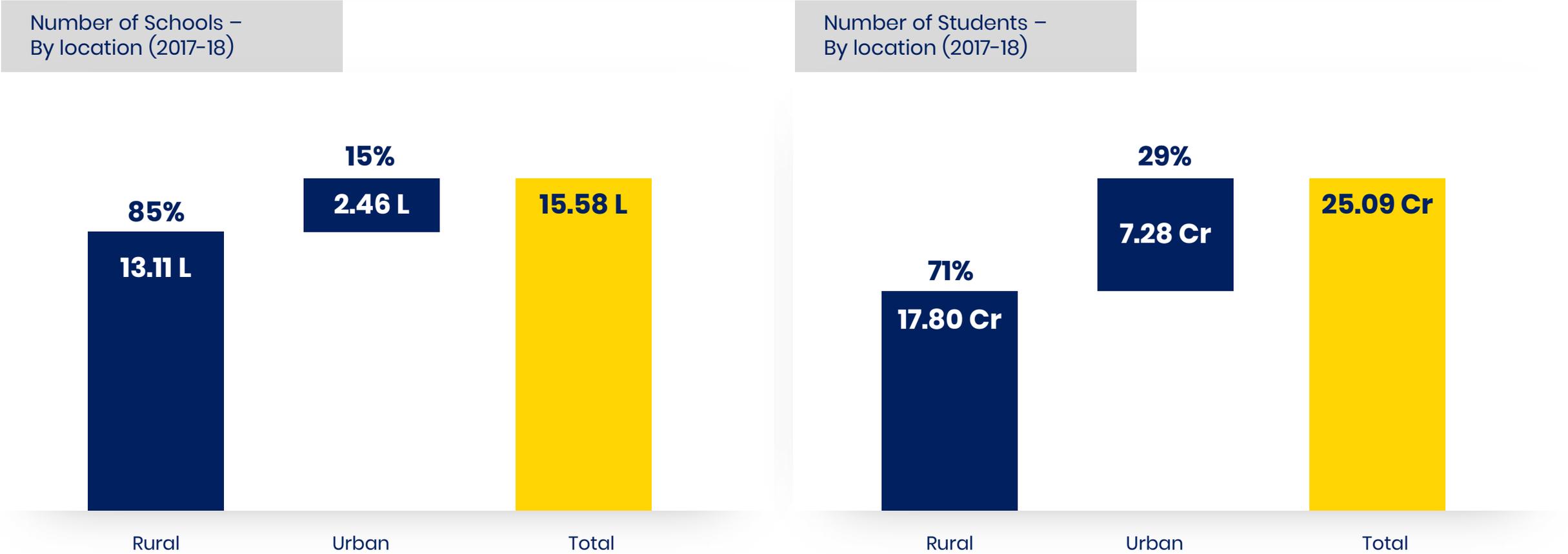
Three quarters of all teachers are based in rural locations

- The total number of teachers has seen a growth in both rural and urban locations

- In urban locations, number of teachers grew from 21 lakh to 25 lakh between 2013 and 2018

- During the same time, number of teachers grew from 61 lakh to 67 lakh in rural locations

Urban 🟨 Rural 🟦

Number of teachers – Rural v Urban

	2013–2014	2014–2015	2015–2016	2016–2017	2017–2018
Rural	61.05 L	62.79 L	63.26 L	64.66 L	67.43 L
Urban	21.44 L	22.47 L	23.08 L	23.76 L	25.11 L
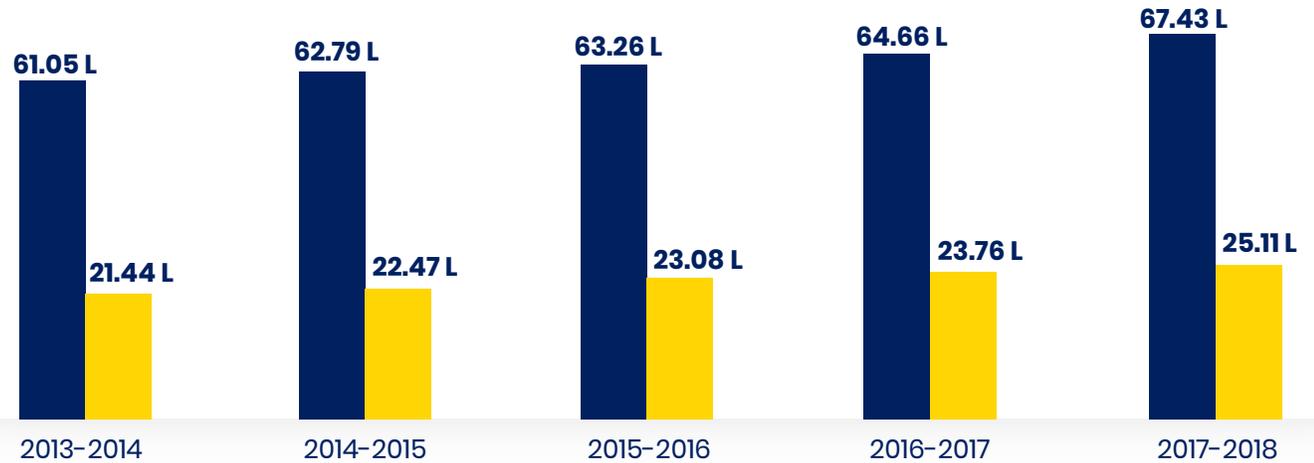
Share of teachers by location

	2013–2014	2014–2015	2015–2016	2016–2017	2017–2018
Urban	26%	26%	27%	27%	27%
Rural	74%	74%	73%	73%	73%

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Source: UDISE

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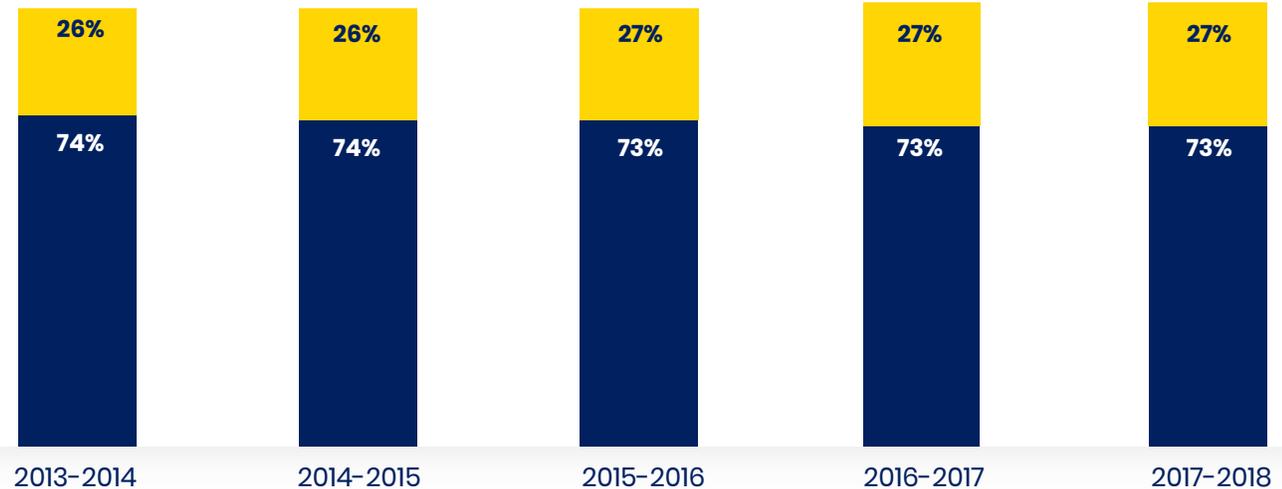
Government vs. Private

Of the total schools, 70% or 11 lakh are government schools, its share however is declining

▶ The percentage share of private schools increased 5 percentage points between 2013 and 2018

▶ Although the number of government schools has not seen any significant change, its percentage share decreased by 2 percentage points

Schools by management type (2017-18)

Category	Value
Govt Schools	10.94 L
PVT Schools	3.79 L
Govt aided Schools	0.8 L
Total	15.58 L

Share of schools by Management Type

Legend: Govt ■ (dark blue) | Private ■ (yellow) | Govt Aided ■ (light blue)

	2013-14	2014-15	2015-16	2016-17	2017-18
Govt	72.15%	73.05%	72.57%	71.72%	70.21%
Private	19.09%	21.48%	21.92%	22.82%	24.37%
Govt Aided	4.52%	5.47%	5.50%	5.46%	5.42%
	4.24%	0.00%	0.00%	0.00%	0.00%

Source: UDISE

Student enrollment in private schools is increasing

▶ Total private school enrollment as well as percentage share of private schools has seen a steady increase since 2013-14

▶ During the same time, government enrollment increased briefly in 2014-15 and declined since

▶ This growth in private school enrollment can be seen across all states in this five-year period

Enrollment share by Management Type

Govt ■ Private ■ Govt Aided ■

	2013-14	2014-15	2015-16	2016-17
Govt	53.3%	55.6%	54.9%	54.4%
Private	28.9%	32.8%	33.6%	34.1%
Govt Aided	10.0%	11.6%	11.5%	11.5%

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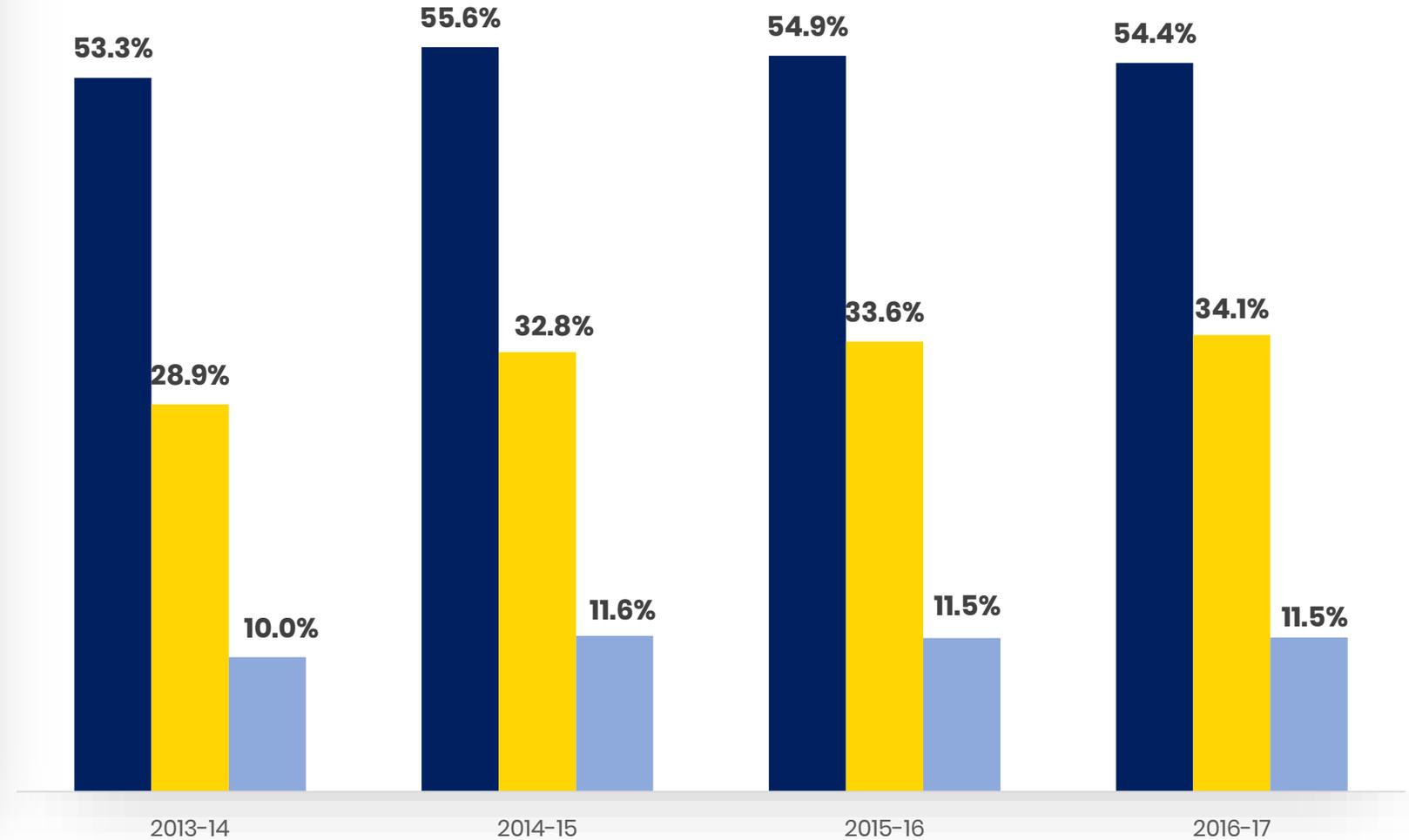
Rural areas are mainly served by government schools

▶ While 77% schools in rural areas are government run, only 33% of them operate in urban areas

▶ There has been a slight decline in the percentage share of government schools in both rural and urban areas

Percentage share of schools by Management Type (Rural)

Others ■ Government ■
Government aided ■ Private ■

	2013–14	2014–15	2015–16	2016–17	2017–18
Others	3.6%	0.0%	0.0%	0.0%	0.0%
Government aided	3.7%	3.7%	3.7%	3.7%	3.7%
Private	14.0%	15.9%	16.3%	17.1%	18.5%
Government	78.6%	79.6%	79.2%	78.4%	77.0%
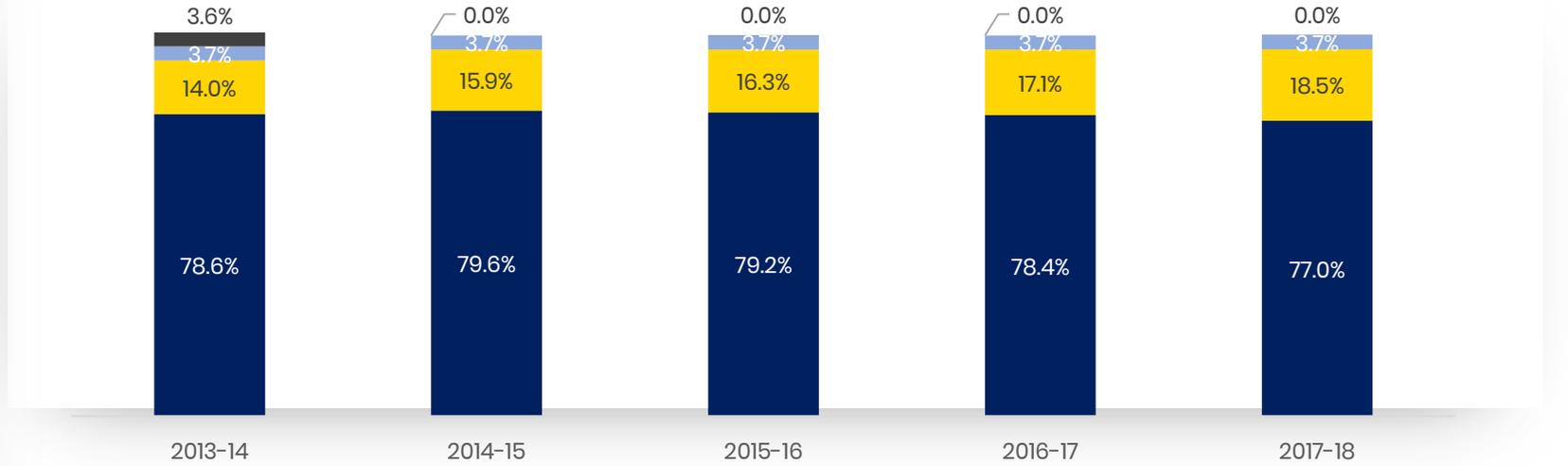
Percentage share of schools by Management Type (Urban)

Others ■ Government ■
Government aided ■ Private ■

	2013–14	2014–15	2015–16	2016–17	2017–18
Others	7.8%	0.0%	0.0%	0.0%	0.0%
Government aided	9.3%	11.0%	11.1%	10.9%	10.7%
Government	35.3%	36.3%	36.0%	35.3%	33.9%
Private	47.7%	52.7%	52.9%	53.7%	55.4%

Source: UDISE
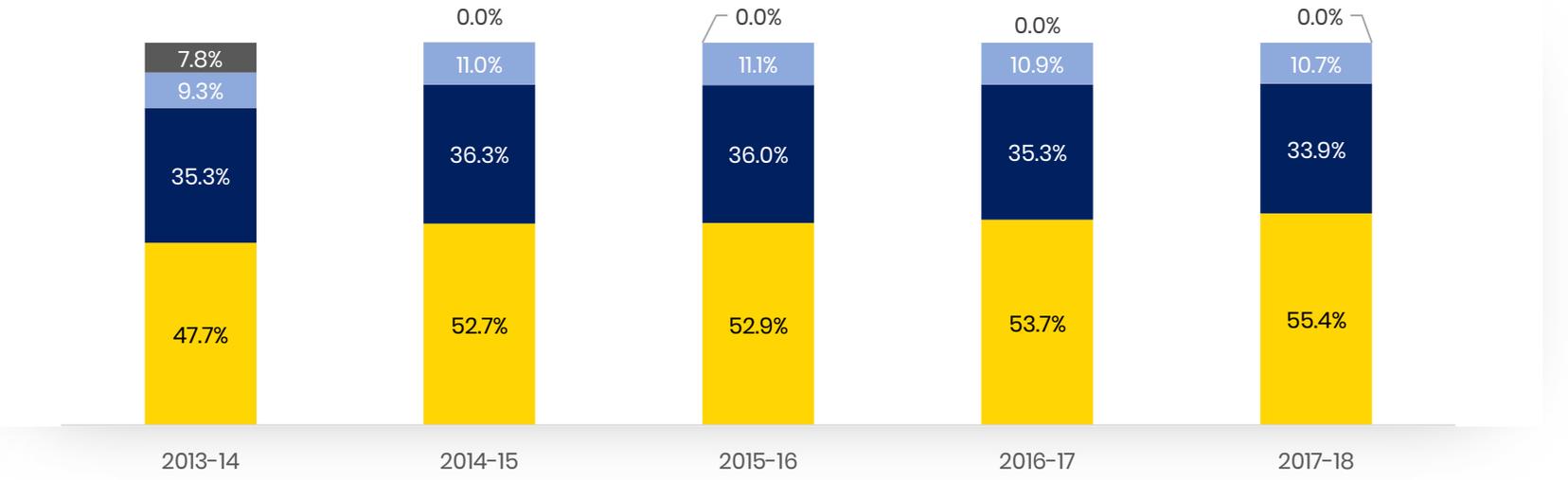
Students in rural settings predominantly attend government schools

▶ Enrollment share of private schools has grown in both rural and urban locations

Enrolment Share by Management Type (Urban)

Legend: Others ■ | Government ■ | Government aided ■ | Private ■

	2013-14	2014-15	2015-16	2016-17	2017-18
Others	7.3%	0.0%	0.0%	0.0%	0.0%
Government aided	7.9%	9.2%	9.0%	9.1%	8.8%
Private	21.8%	25.5%	26.1%	26.4%	28.2%
Government	63.0%	65.3%	64.9%	64.5%	63.0%

Enrolment Share by Management Type (Rural)

Legend: Others ■ | Government ■ | Government aided ■ | Private ■

	2013-14	2014-15	2015-16	2016-17	2017-18
Others	8.9%	0.0%	0.0%	0.0%	0.0%
Government aided	15.8%	18.0%	17.8%	17.7%	16.9%
Government	27.1%	29.8%	29.2%	28.8%	26.9%
Private	48.2%	52.2%	53.0%	53.5%	56.2%

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Source: UDISE

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Uttar Pradesh, Mizoram and Uttarakhand witnessed significant shift towards private schools between 2013 and 2018

▶ Most states have witnessed an increase in the share of private schools

▶ In contrast, private school share declined in Tripura, Telangana and Andaman and Nicobar Islands

Difference in Private School Share (2017-18 v 2013-14)

Large state
State	Value
Uttar Pradesh	14.8
Uttarakhand	11.51
Bihar	9.31
Karnataka	8.6
Jharkhand	7.95
Maharashtra	7.51
Gujarat	7.44
Rajasthan	6.76
Haryana	6.19
Punjab	5.74
Assam	5.35
Orissa	3.23
Chhattisgarh	2.58
Andhra Pradesh	2.19
Kerala	1.99
West Bengal	1.53
Madhya Pradesh	1.48
Himachal Pradesh	1.37
Tamil Nadu	1.22
Jammu & Kashmir	0.88
Telangana	-5.59

Small state
State	Value
Mizoram	11.53
Nagaland	5.73
Meghalaya	5.57
Manipur	3.92
Arunachal Pradesh	2.17
Sikkim	1.13
Goa	0.11
Tripura	-16.25

UT
UT	Value
Chandigarh	5.09
Delhi	4.09
Puducherry	2.89
Dadra And Nagar Haveli	1.07
Lakshadweep	0
Andaman & Nicobar Islands	-4.48

Source: UDISE

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Private schools have more students per school than government schools

▶ Govt schools have between 111 and 234 student per school, in rural and urban areas respectively. In comparison, private schools have 207 and 299 students per school in rural and urban areas respectively

▶ Between 2013 and 2018, students per school has seen a declining trend although it appears more pronounced for private schools

Students per school (2013-14 V 2017-18)

Legend: ■ 2013-14 ■ 2017-18

Category	2013-14	2017-18
Rural - Govt	117.0	111.0
Rural - Private	226.2	206.7
Urban - Govt	237.0	234.0
Urban - Private	312.3	299.4

Students Per School (2017-18)

Legend: ■ Govt ■ Pvt

Category	Govt	Pvt
Rural	111.0	206.7
Urban	234.0	299.4

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Source: UDISE

Government schools employ majority of teachers in India

▶ The percentage share of teachers in government schools declined from 56% to 53.8% between 2013 and 2018

▶ In the same period, number of private school teachers saw a 8pp increase, from 29.4% to 37%

Number of teachers by Management Type (2017-18)

- Government: 54% / 49.79 L
- Private: 37% / 34.34 L
- Govt aided: 9% / 8.40 L
- Total: 92.54 L

Percentage share of teacher by Management Type

Year	Government	Private	Government Aided
2013-14	56.00%	29.40%	8.50%
2014-15	57.80%	32.30%	9.80%
2015-16	57.10%	33.10%	9.80%
2016-17	56.50%	34.10%	9.50%
2017-18	53.80%	37.10%	9.10%

■ Government ■ Private ■ Government Aided

CENTRAL SQUARE FOUNDATION

Private schools have more teachers per school compared to government schools

▶ Govt schools in urban areas (8) have double the number of teachers (per school) compared to rural (4) areas

▶ Between 2013 and 2018, teachers per school has seen an upward trend across private and government schools in both rural and urban locations

Teachers per school (2013-14 v 2017-18)

■ 2013-14 ■ 2017-18

	Rural - Govt	Rural - Private	Urban - Govt	Urban - Private
2013-14	3.9	7.5	7.8	9.9
2017-18	4.2	8.1	8.4	10.8
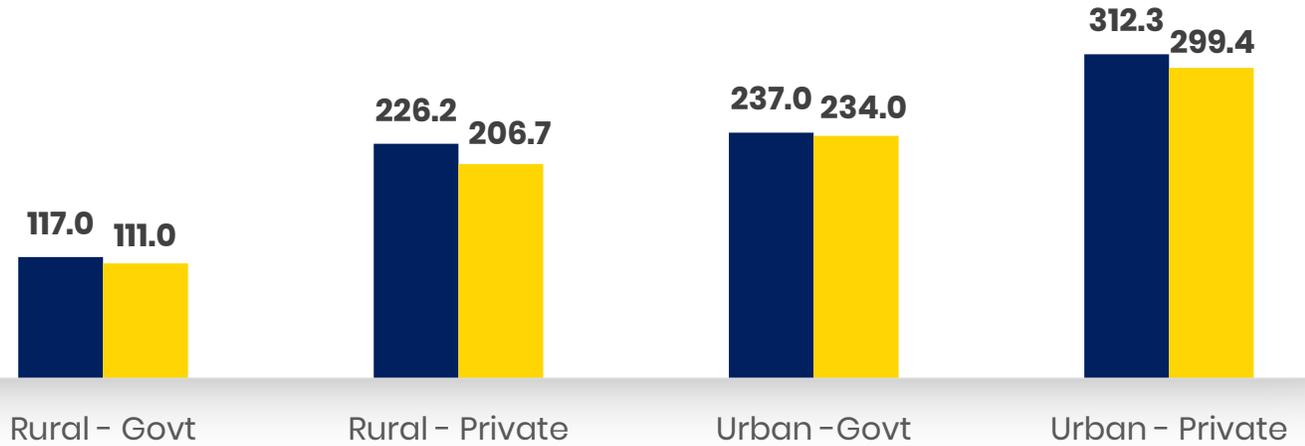
Teachers per school (2017-18)

■ Govt ■ Pvt

	Govt	Private
Govt	4.2	8.4
Pvt	8.1	10.8

Source: UDISE

CENTRAL SQUARE FOUNDATION
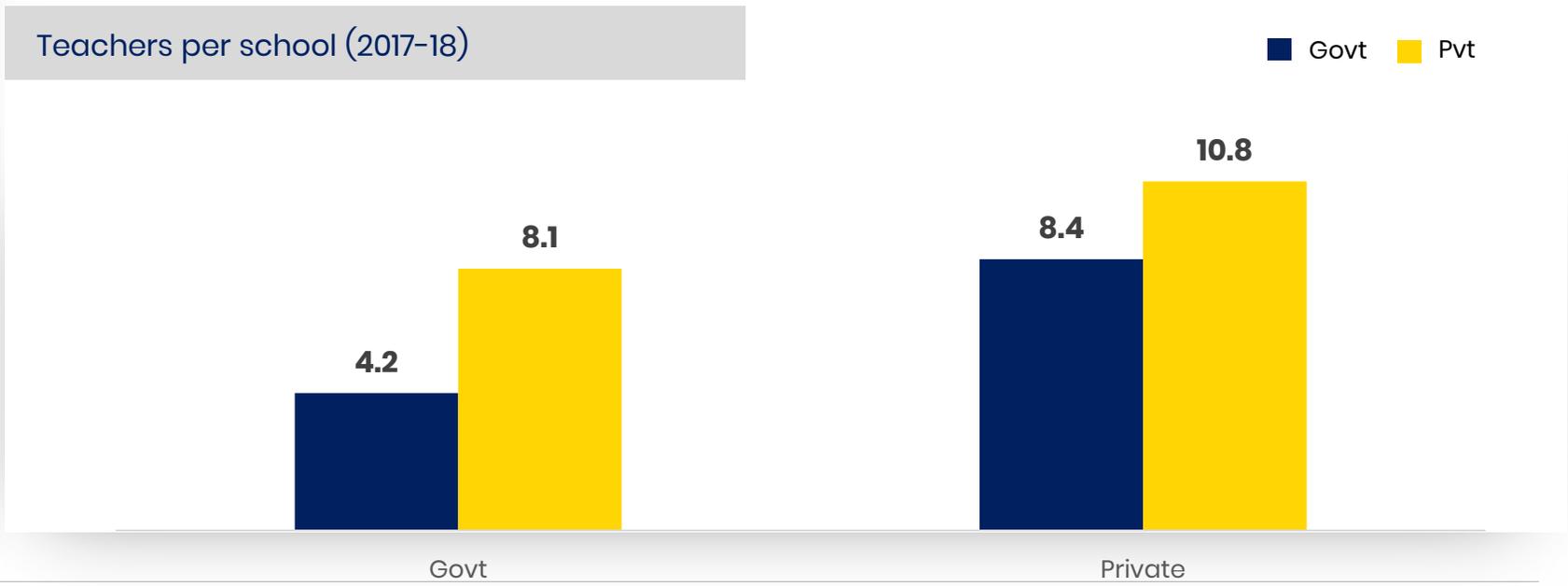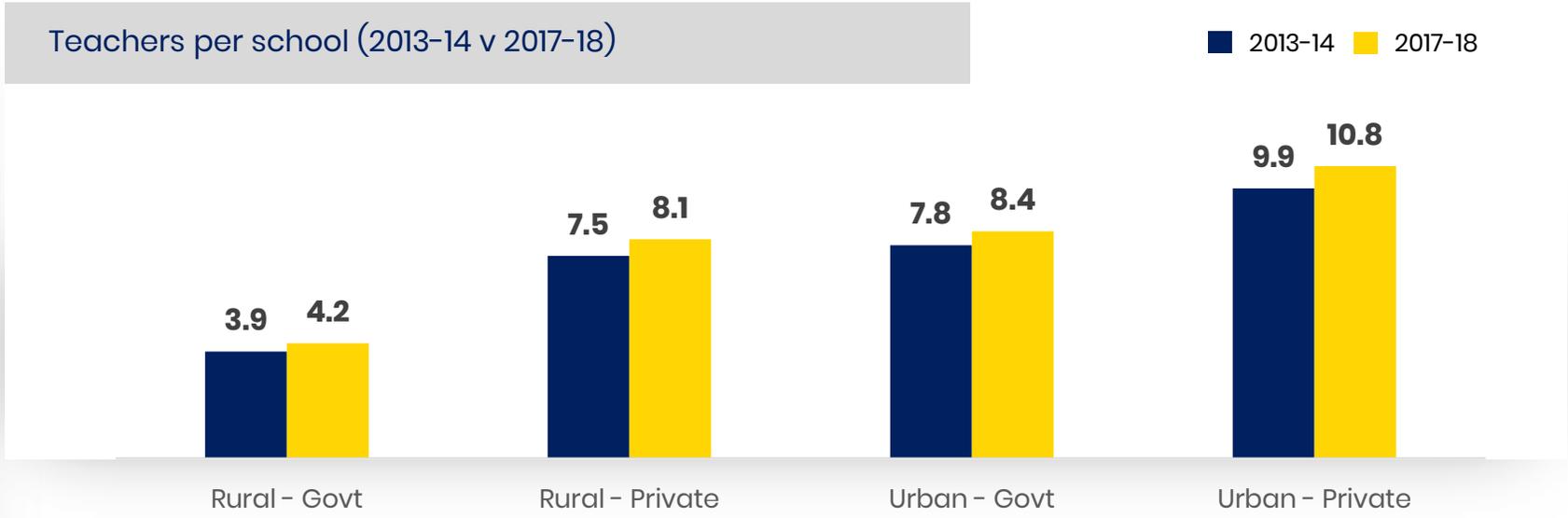
Learning Outcomes

Learning outcomes remain consistently low in primary education
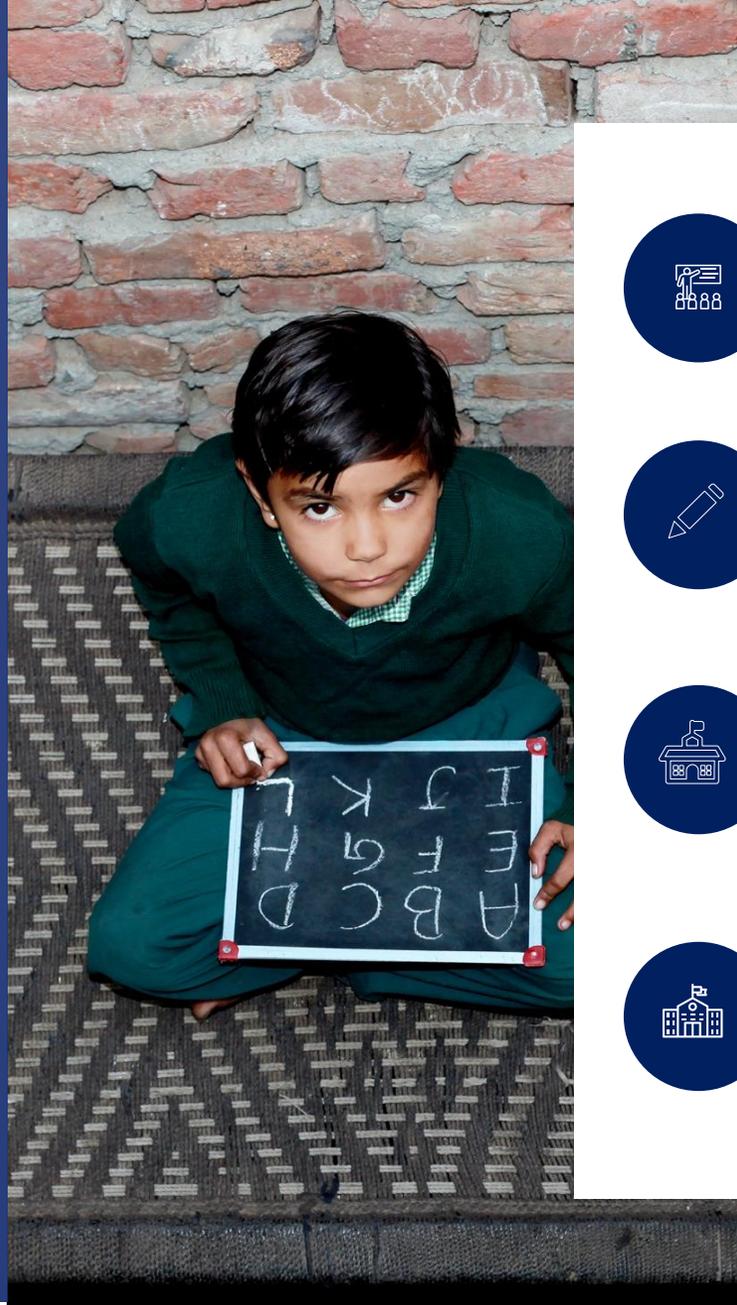
Learning outcomes in Indian primary education have been consistently low. Even though children are moving up from one grade to another, few master the grade-level competencies expected of them

ASER, based on a sample of schools in all rural districts, shows that 72% of grade 5 children from rural India cannot do simple division problems. The percentage of students who can correctly do a three-digit to one-digit division problem reduced from 68% in 2010 to 43% in 2018

NAS cycle 3 and 4 for grade 5 revealed that 19 out of 31 states/union territories which participated in both cycles show a decline in language and math outcomes in government schools

The outcomes are low across all categories of schools, although the problem is particularly acute in government schools with affordable private schools performing slightly better on an average. High fee paying private schools achieve significantly better outcomes than both school types but lower than international averages*

Older children perform better than younger in grade 1

- Many 4 & 5 year old children are able to comfortably do several several age/grade appropriate cognitive tasks

- Within Grade I, children's performance on cognitive early language and early numeracy is strongly related to their age. Older children do better on all tasks

- For example, within the Grade I cohort only a small percentage of age 4 and 5 children can read Grade I level text (5.7%). This proportion increases with age, with 12.7% of 6-year-olds and 26% of 7 and 8 year-olds able to read Grade I level text

Children in Grade 1 who can correctly do cognitive tasks by age

Legend: Seriation | Pattern recognition | Puzzle

	Age 4 and 5	Age 6	Age 7 and 8	All Grade I
Seriation	50.6	67.3	74.5	66.5
Pattern recognition	49.6	59.6	63.7	59
Puzzle	53.5	51.7	57.5	54.3
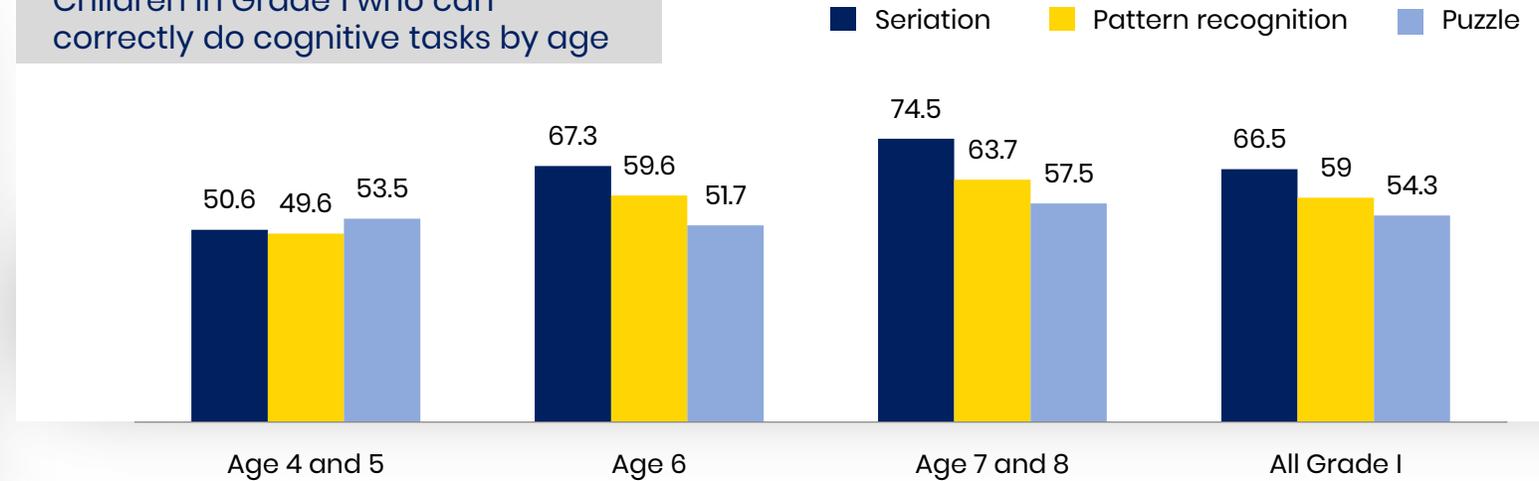
Distribution of children's reading ability in Grade 1 by age 2019

Legend: Not even letter | Letter | Word | Grade 1 Level text

	Not even letter	Letter	Word	Grade 1 Level text
Age 4 and 5	62.6	25.4	6.3	5.7
Age 6	40.9	31.5	14.9	12.7
Age 7 and 8	23.5	29.8	20.7	26
All Grade I	39	29.6	15.2	16.2
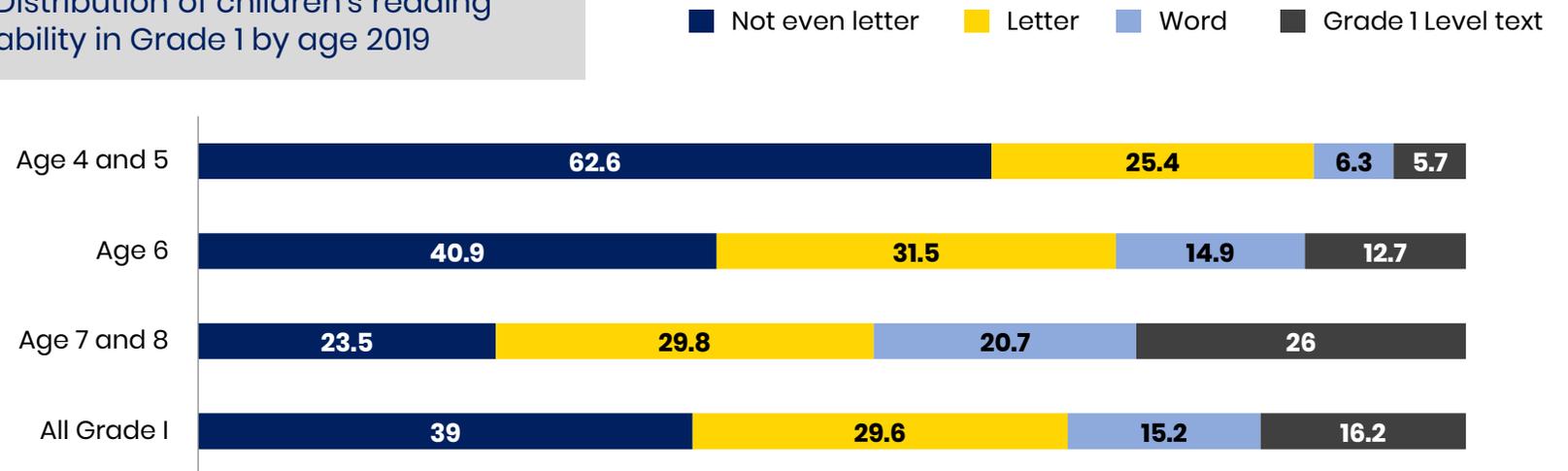
By grade 3, students lag behind their grade level competencies

▶ Students foundational skills tend to improve with each subsequent grade. But even by grade 3, a substantial percentage of all children are well behind where they are expected to be by end of grade I

▶ Children's ability to read grade I level text improves from 34.8% of children in grade 2 to 50.8% children in grade 3 being able to successfully do so. However, this implies that half of all children in grade III are at least two years behind where the curriculum expects them to be

▶ Similarly, 41.1% of students in grade I can recognize two-digit numbers, while 72.2% of students in grade 3 can do so

Distribution of children's ability to recognize numbers within each grade

■ Not even 1-9   ■ No: Recognition 1-9   ■ No: Recognition 11-99

	Not even 1-9	No: Recognition 1-9	No: Recognition 11-99
Grade I	26.9	32	41.1
Grade II	11.6	27.1	61.3
Grade III	5.6	22.2	72.2
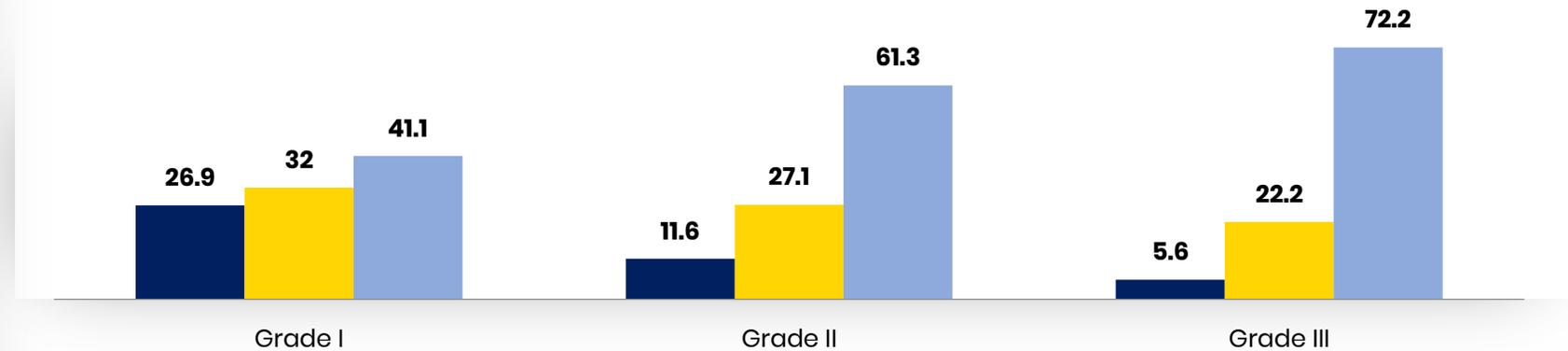
Distribution of children's reading ability within each grade

■ Not even letter   ■ Letter   ■ Word   ■ Grade 1 Level text

	Not even letter	Letter	Word	Grade 1 Level text
Grade I	39	29.6	15.2	16.2
Grade II	22.3	23.5	19.4	34.8
Grade III	14.7	18.1	16.5	50.8

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Source : ASER 2019

35
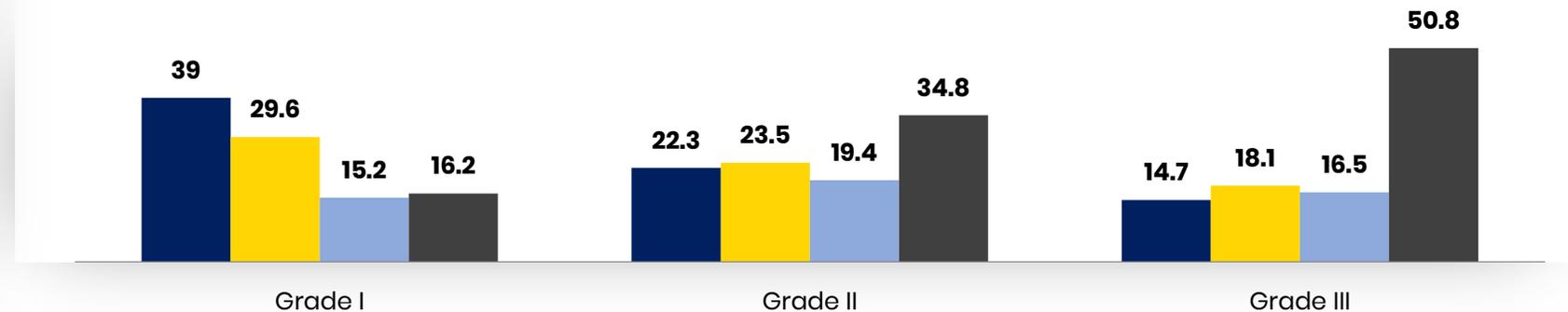
Approximately 50% of grade 5 students cannot read grade 2 level text, 72% cannot do division

- ▶ Private schools score 20.9pp higher than government schools in reading and 17pp higher in math

- ▶ Slightly more than half of all children enrolled in grade 5 can read at least a grade 2 level text. This figure has increased from 47.9% in 2016 to 50.5% in 2018

- ▶ Percentage of children in grade 5 across India who are able to do division has increased from 24.9% to 27.9% between 2012 and 2018. This rise is seen in both private and government schools

% children in Grade V who can read Grade II level text

Govt   Private   Govt & PVT

Year	Govt	Private	Govt & PVT
2012	41.7	61.2	46.9
2014	42.2	62.6	48
2016	41.7	63	47.9
2018	44.2	65.1	50.5
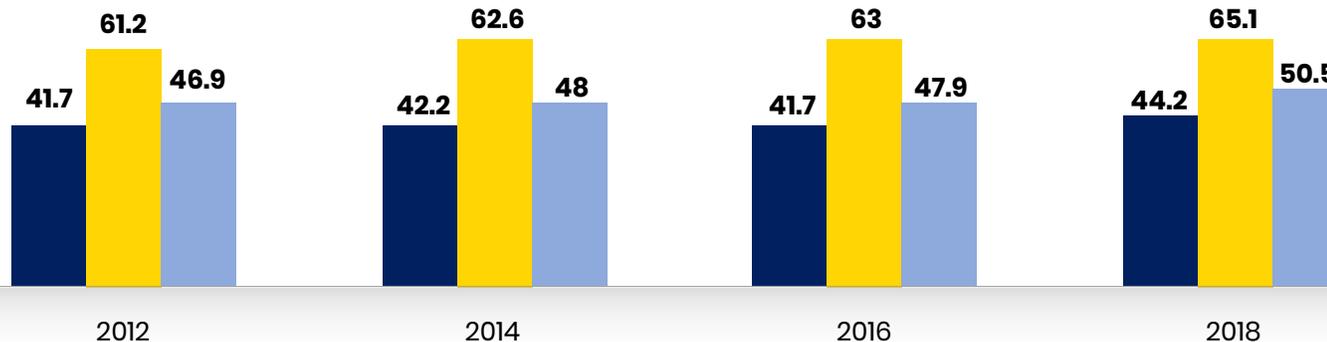
% children in Grade V who can do division

Govt   Private   Govt & PVT

Year	Govt	Private	Govt & PVT
2012	20.3	37.8	24.9
2014	20.7	39.3	26.1
2016	21.1	38	26
2018	22.7	39.8	27.9

Source : ASER 2018
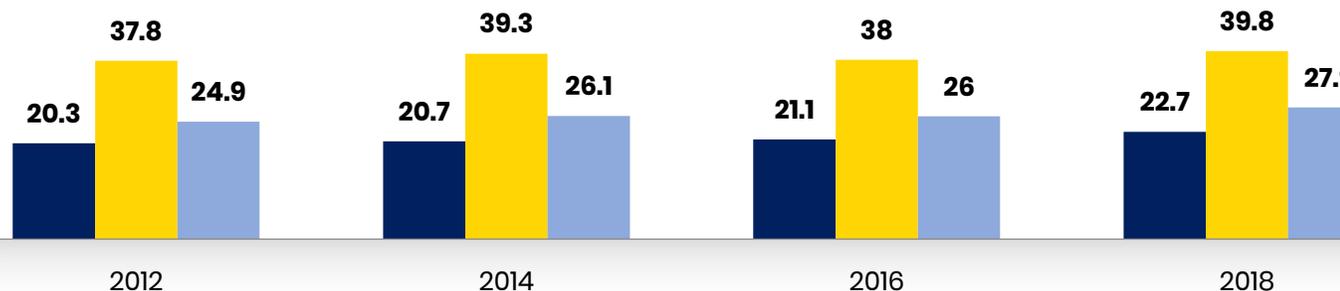
By grade 8, a majority of students manage to successfully complete a grade 2 level reading task

▶ The gap between private and government schools is smaller in grade 8 compared to grade 5. Private schools score 14pp higher in both reading and math

▶ Proportion of children enrolled in grade 8 in India who can read at least grade 2 level text has declined from 76.5% in 2012 to 73% in 2018. The decline can be seen across private and government schools

▶ Currently around 44% of all children in grade 8 can solve a three-digit by one-digit numerical division problem correctly. This too has seen a decline across private and government since 2012

Children in Grade VIII who can read Grade II level

Legend: ■ Govt ■ Private ■ Govt & PVT

Year	Govt	Private	Govt & PVT
2012	73.4	84.2	76.5
2014	71.5	82.4	74.7
2016	70	81	73.1
2018	69	82.9	73
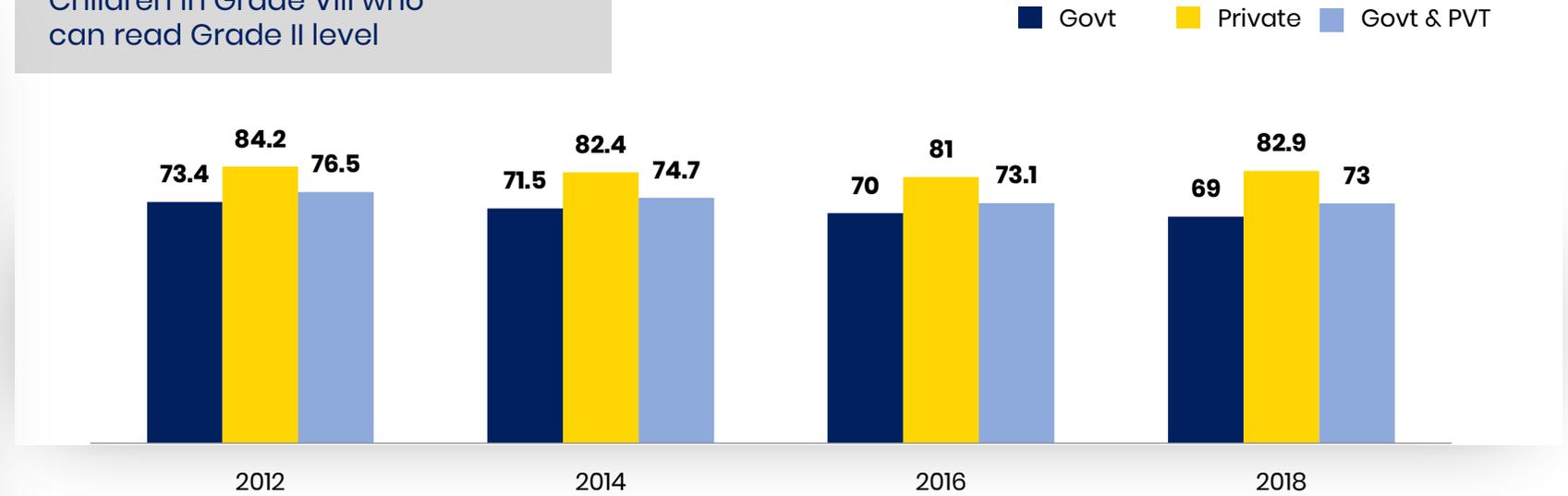
Children in Grade VIII who can division

Legend: ■ Govt ■ Private ■ Govt & PVT

Year	Govt	Private	Govt & PVT
2012	44.5	57.1	48.1
2014	40	54.2	44.2
2016	40.2	51.2	43.3
2018	40	54.2	44.1
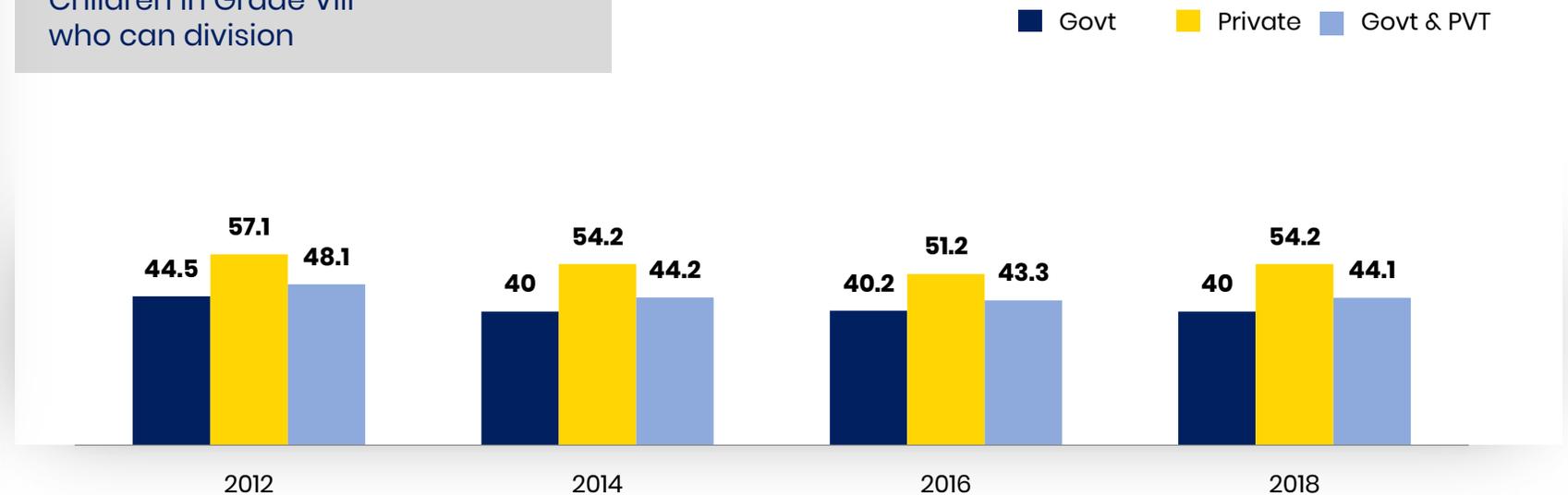
NAS data suggests, 54% of Grade 8 can read Grade level text

▶ 67% students in Grade 3 can read small texts with comprehension; number decreases to 54% by Grade 8

▶ 56% students in Grade 3 can use basic math to solve daily life problems; number decreases to 38% by Grade 8

▶ Grade 10 students perform the best in language subjects and poorly in math and science

Average performance of students (Grade X)

Government   Private Aided   Private Unaided

Mathematics: 33.3, 33.0, 36.4
Science: 33.6, 34.2, 36.5
Social Science: 38.4, 39.5, 41.4
Modern Indian Languages: 47.6, 49.2, 51.7
English: 33.1, 35.9, 42.9
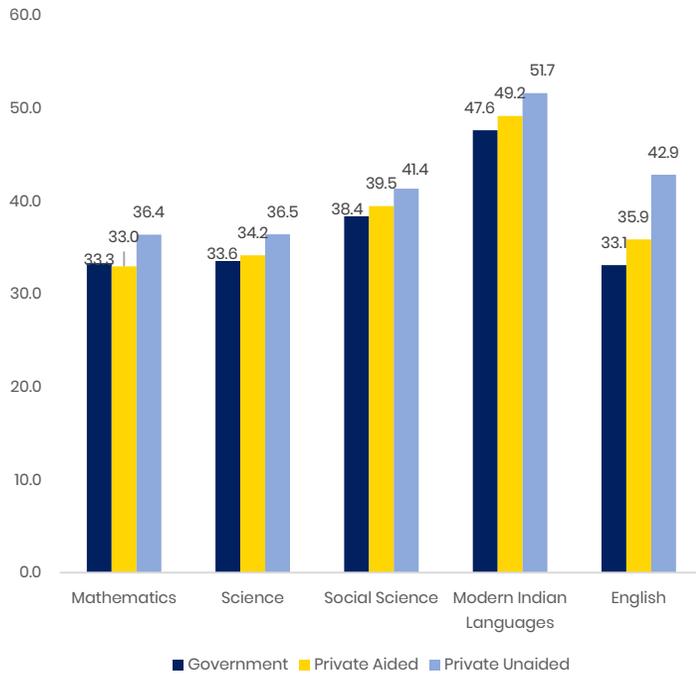
Who can read with comprehension

Grade 3: 67%
Grade 5: 55%
Grade 8: 54%
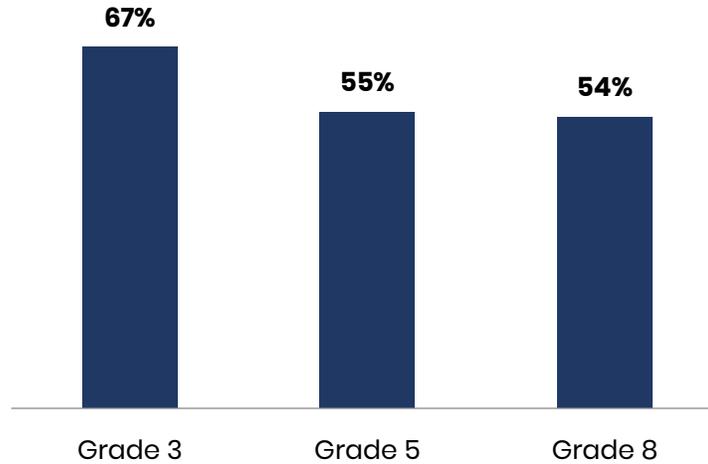
Who can solve daily life problems using math

Grade 3: 56%
Grade 5: 46%
Grade 8: 38%

Source: UDISE

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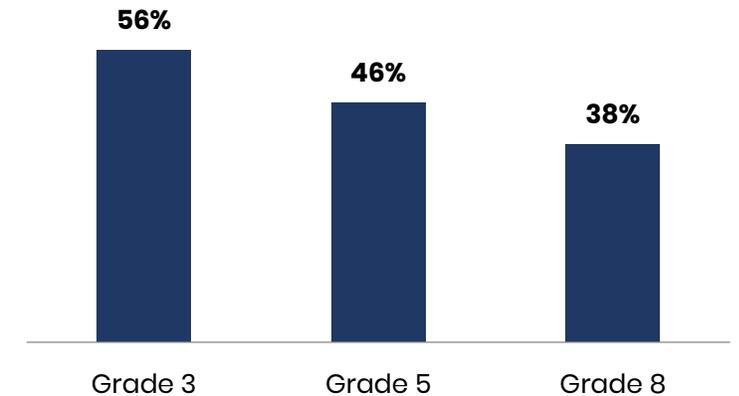
Budgets

Budgeted expenditure on education witnessed steady increase between 2014 and 2017

▶ The budgeted expenditure on education increased from Rs 3.6 lakh crore in 2014–15 to Rs 4.6 lakh crore in 2016–17

▶ States contributed 80% of budgeted expenditure towards education

Budgeted Expenditure (in crore)

■ Centre ■ State ■ Total

2014-15 (Actual): Centre 68,926, State 2,92,386, Total 3,61,312
2015-16 (RE): Centre 67,586, State 3,35,226, Total 4,02,812
2016-17 (BE): Centre 72,394, State 3,90,004, Total 4,62,398
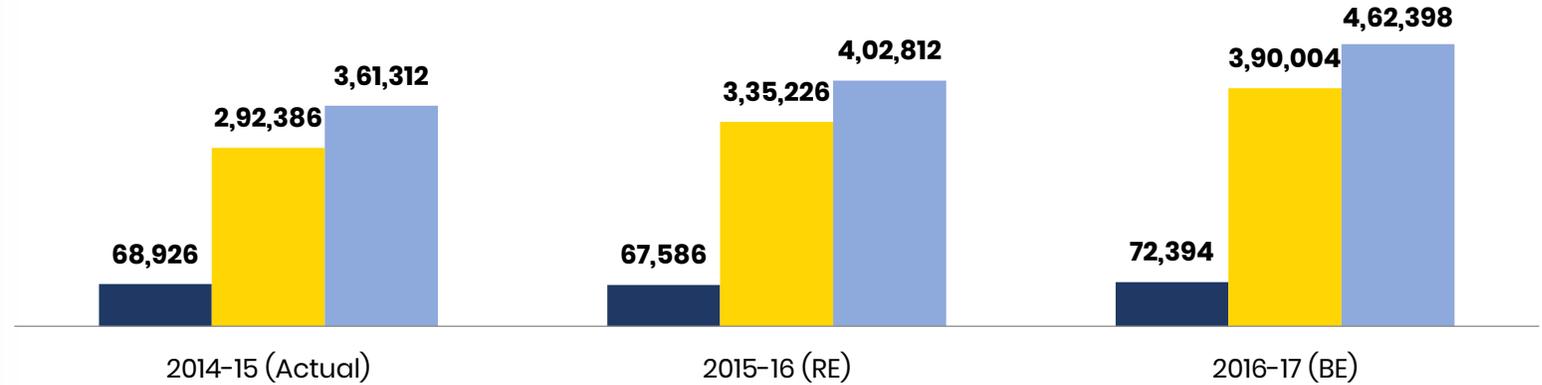
% Contribution to budgeted expenditure (Centre v State)

■ Centre ■ State

2014-15 (Actual): State 80.9%, Centre 19.1%
2015-16 (RE): State 83.2%, Centre 16.8%
2016-17 (BE): State 84.3%, Centre 15.7%
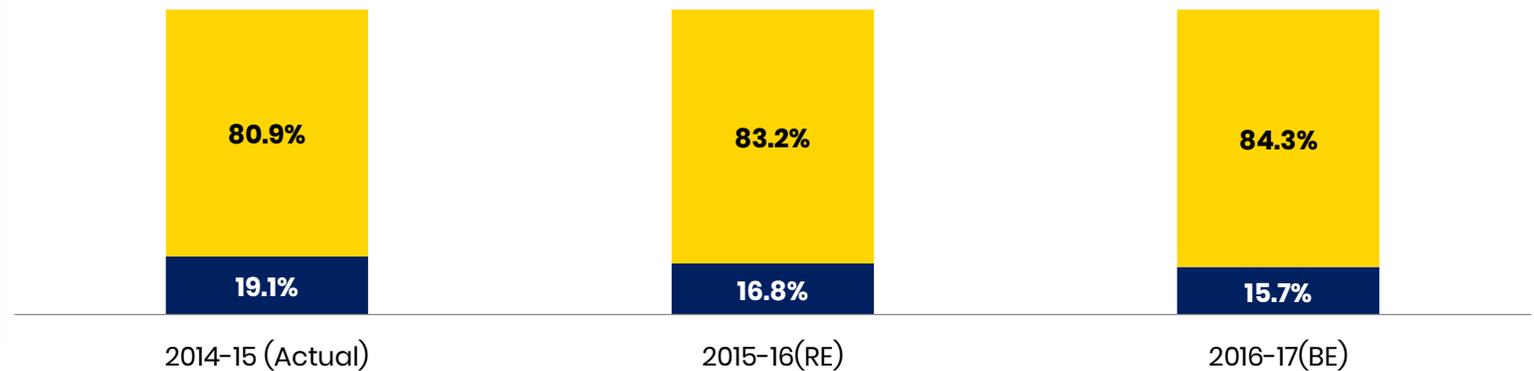
Expenditure on education, as a percentage of GDP, increased between 2006 and 2016

- ▶ Centre's expenditure, as a percentage of GDP, has remained consistent

- ▶ State expenditure, as a percentage of GDP, has steadily increased in the same period

Expenditure on Education as % of GDP

	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16 (RE)	2016-17 (BE)
(States+ Centre) as % of GDP	3.5	3.4	3.6	4.0	4.1	3.8	3.7	3.8	4.1	4.3	4.4
Centre as % of GDP	0.9	0.9	0.9	1.1	1.1	1.0	0.9	1.0	1.1	1.0	1.1
States as % of GDP	2.6	2.5	2.7	2.9	2.9	2.8	2.8	2.8	3.0	3.3	3.3

States as % of GDP — Centre as % of GDP — (States+ Centre) as % of GDP

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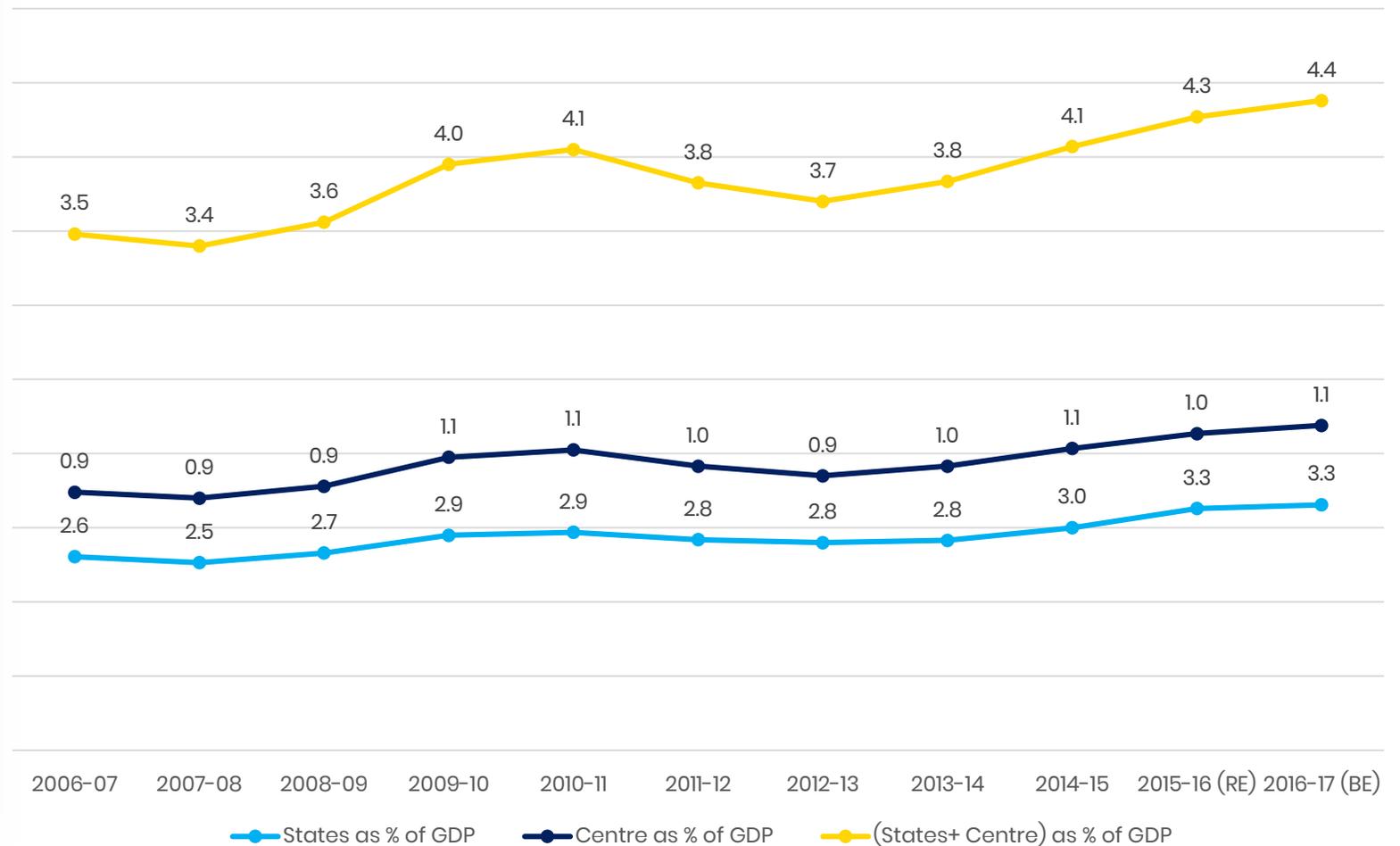
Assam, among large states, has the highest education expenditure as percentage of GSDP

Among large states, Assam, Jammu and Kashmir and Uttar Pradesh have spent over 5% of GSDP on education

Small states such as Manipur, Mizoram and Nagaland had the highest education expenditure as percentage of its GSDP

% of Education Budget to Total GSDP

State	%
Assam	6.0
Jammu & Kashmir	5.4
Uttar Pradesh	5.4
Madhya Pradesh	4.8
Himachal Pradesh	4.7
Odisha	4.3
Chhattisgarh	4.2
Andhra Pradesh	4.1
Bihar	4.0
Jharkhand	3.8
Rajasthan	3.6
Uttarakhand	3.6
West Bengal	3.5
Kerala	3.1
Tamil Nadu	3.0
Haryana	2.7
Telangana	2.6
Maharashtra	2.6
Punjab	2.6
Karnataka	2.4
Gujarat	2.4
Manipur	7.3
Mizoram	6.8
Nagaland	6.2
Meghalaya	6.0
Tripura	6.0
Sikkim	5.4
Arunachal Pradesh	4.9
Goa	4.0
A&N Islands	9.0
Puducherry	3.8
Chandigarh	2.7
Delhi	1.6

Legend: Large State | Small state | UT

Policy Highlights and Initiatives

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Part B: Policy highlights and initiatives

▶ This part of The School Education in India: Data, Trends, and Policies report provides an overview of key policy developments of the recent past, along with evidence on the topic, and analysis. Starting with the discussion of the National Education Policy 2020, this part of the report further explores the policy interventions and initiatives in school education that are being implemented by the union and states governments.

At the time of writing this part, India had been under lockdown for about 5 months. Hence, this report also includes a discussion of the potential impacts of COVID-19 induced school closures on school education, the important role played by EdTech in addressing disruption to learning and its challenges, and the education response to COVID-19 of some states in India.

Disclaimer: This report is based on publicly available information. The discussions in this report pertaining to the National Education Policy (2020), and Union and State Government initiatives are not necessarily reflective of the Government's official view and must not be construed as such. All errors are our own.

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Policy highlights and initiatives: an overview

National Education Policy and other Developments

Documents key policy developments in school education in India in the past one year

Government initiatives in school education

Captures key central and state government initiatives in school education in India in the past one year

Education in the times of COVID-19

Discusses the impact of COVID-19 on school education and response strategies of Indian states

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Contents

National Education Policy and other developments

- National Education Policy, 2020- School Education
- Retracting no detention policy
- Compulsory English medium instruction in Government Schools of Andhra Pradesh
- School Education Quality Index (SEQI)
- India's re-entry into Programme for International Student Assessment (PISA)

Government initiatives in school education

- UDISE+
- Digital Infrastructure for Knowledge Sharing (DIKSHA) platform
- National Initiative for School Heads and Teachers' Holistic Advancement (NISHTHA)
- Education reforms by Delhi government
- Mission Prerna by Government of Uttar Pradesh

Education in the times of COVID-19

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1

National Education Policy and other developments

National Education Policy, 2020

National Education Policy (2020)– School Education

01 Early Childhood Care and Education (ECCE)

02 Foundational Literacy and Numeracy (FLN)

03 Curtailing dropout rates and ensuring universal access to education at all levels

04 Curriculum and pedagogy in schools: Learning should be holistic, integrated, enjoyable, and engaging

05 Teachers

06 Equitable and inclusive education: learning for all

07 Efficient resourcing and effective governance through school complexes/ clusters

08 Standard-setting and accreditation for school education

Early Childhood Care and Education (ECCE)

"Universal provisioning of quality early childhood development, care, and education must thus be achieved as soon as possible, and no later than 2030, to ensure that all students entering Grade 1 are school ready"

– NEP, 2020

Why is ECCE so important?

- Multidisciplinary research suggests that first few years of a child's life lay the foundation for future development

- In fact, research in neuroscience provides strong evidence that the pace of development of the brain is most rapid in the early years of life

- 90% of the brain's growth has already occurred by the time a child is 6 - years - old (Karoly et al., 1998)

- Thus, intervening early to provide appropriate support and care to young children can lead to a range of benefits overtime (Ludwig & Miller, 2007)

- A longitudinal study conducted by the CECED and ASER, tracking 13,000 children for five years, showed that students' average test scores (math and language) improved significantly as a result of quality ECE (Kaul et al., 2014)

Highlights from NEP, 2020

- Ensure universal access to high-quality ECCE in a phased manner prioritising the socio-economically disadvantaged districts of the country

- National curricular and and pedagogical framework for children upto age 8 will be developed by the NCERT

- Identifies four different modalities for providing early childhood education:
  - Stand alone Anganwadi Centres (AWCs)
  - AWCs co-located with primary schools
  - Pre-primary schools co-located with primary schools
  - Standalone pre-schools

- Anganwadi teachers will be trained to prepare initial cadre of high-quality ECCE teachers

Limited ECCE › Lack of school readiness and grade-preparedness › Fail to attain FLN › Fall behind in class, often dropout
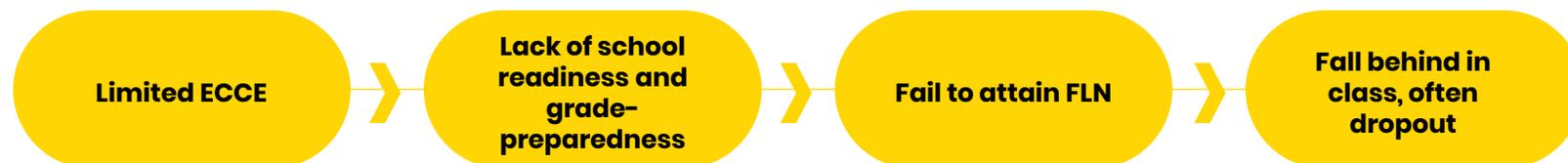
Early childhood education has a high rate of return...

> "Skill formation is a dynamic process with strong synergistic components. Skill begets skill. Early investment promotes later investment."
>
> **– James Heckman, Nobel Laureate in Economics**

- James Heckman demonstrated that investments in the early childhood stage yield maximum returns as compared to later stages of childhood and education. However, recent research suggests that later stage interventions also hold promise (Rea & Burton, 2020)

- Longitudinal study in 3 Indian states tracking ~13K children for 5 years shows that student's average test scores in (math & language) improved significantly as a result of quality ECCE (Kaul et al, 2014)

- Starting 1973, an ECCE programme has been implemented in Kingston, Jamaica. Evidence suggests that the programme has had wide ranging benefits including cognitive, social, educational and mental health benefits, and increased wages (Walker et al., 2011; Gertler et al., 2014)

- Colombia has formalised ECCE and made transition grade (grade 0, for 5 – years – old) compulsory for all children. In 2011, ECCE was made a presidential priority with the adoption of a comprehensive ECCE strategy – from zero to forever (OECD, 2016)
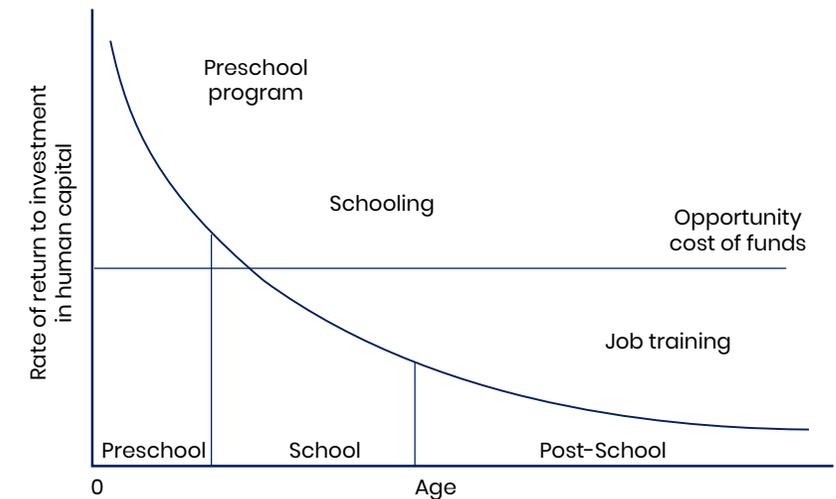
Rates of return to human capital investment initially setting investment to be equal across all ages

Heckman Curve

Foundational Literacy and Numeracy (FLN)

Various governmental, as well as non-governmental surveys, indicate that we are currently in a learning crisis: a large proportion of students currently in elementary school - estimated to be over 5 crore in number - have not attained foundational literacy and numeracy"

– NEP, 2020

FLN is children's ability to read with meaning and do basic calculations by grade 3

State of FLN in India

Over 70% children in grade 3 do not have basic arithmetic skills and 50% do not have basic reading skills

50.8   **100**

Only **50.8 %** of children in grade 3 in rural India could read a grade 1 level text

30.6   **100**

Only **30.6%** of children in grade 3 in rural India could do a 2-digit subtraction problem task

Source: Annual status of education report (ASER) 2019

Foundational Literacy and Numeracy (FLN)

"The highest priority of the education system will be to achieve universal foundational literacy and numeracy in primary school by 2025."

– NEP, 2020

Why is FLN so important?

- Foundational learning forms the basis of all future learning

- Those who fail to attain basic literacy and numeracy skills by grade 3 find it difficult to catch up with the rigour of the curriculum in later classes and fall behind, creating wide learning gaps (NEP, 2020)

- Lack of FLN increases the chances students dropping out of the school system altogether (Nakajima & Otsuka, 2018)

Highlights from NEP, 2020

- A National FLN Mission will be set up by MOE and all the states/UT governments will prepare implementation plans for attaining universal FLN in all primary schools

- Urgent filling of teacher vacancies with focus on areas with large pupil-to-teacher ratios or high rates of illiteracy

- Increased focus on FLN in preparatory and middle school curriculum coupled with continuous adaptive assessments to track individual student's learning

Other FLN initiatives in the NEP, 2020

- To ensure that all students are school ready, an interim 3-month play-based 'school preparation module' for all Grade-I students will be developed by NCERT and SCERTs

- National repository of high-quality resources on FLN will be made available on DIKSHA

- States are encouraged to consider establishing innovative models to support peer-tutoring and volunteer activities to support learners

- Nutrition, and physical and mental health of children is important for learning. These will be addressed through provision of healthy meals and introduction of well-trained social workers, counsellors, and community involvement in schools

Measurement of FLN in India

36% students at **grade 3** are not able to read a paragraph with understanding and 43% cannot use basic math to solve daily life problems

NAS, 2017

Components of FLN

Foundational Literacy: Are students able to read with comprehension by Grade 3 i.e.

- ▶ Identify letters
- ▶ Identify initial or final words
- ▶ Read non-words
- ▶ Read familiar words
- ▶ Listen with comprehension
- ▶ Read with fluency and comprehension

Foundational Numeracy: Are students able to do basic mathematics calculations by Grade 3 i.e.:

- ▶ Identify numbers
- ▶ Discriminate between numbers
- ▶ Find missing numbers
- ▶ Solve addition problems
- ▶ Solve subtraction problems
- ▶ Solve word problems

How is FLN measured in India?

- ▶ Through two large-scale nationwide learning assessments conducted periodically- Annual Status of Education Report (ASER) and National Achievement Survey (NAS)
- ▶ NAS covers **both** urban and rural areas whereas ASER focuses **only** on rural areas
- ▶ Due to differences in sample and content assessed, ASER and NAS estimates are **not comparable**

NAS and ASER: learning assessment surveys

Parameters	National Achievement Survey (NAS)			Annual Status of Education Report (ASER)	
Overview	• Started in 2001-02 • Conducted by NCERT in 33 states and UTs			• Started in 2005 • Conducted in 15,000 villages in India by Pratham, a leading NGO	
Who is assessed?	• Students in grade 3, 5 and 8	• Government and aided schools only	• Rural and urban areas	• Children in the age group of 5-16 years (government, private, out of school)	• Rural districts only
What is assessed?	Grade-level competencies of : • Grade 3: Language and math	• Grade 5: Language, math and EVS	• Grade 8: Language, math, social sc. and science	• Basic reading and arithmetic	• Previous grade competencies (except for grade 1 students)
Frequency	• In the past, each grade surveyed once in three years. Since 2017, all three grades are surveyed simultaneously			• Annual	
Test format and administration	• School based study • MCQ format, with addl. writing task	• Pen and paper test • Coordinated by state agencies like SCERTs, SIEs, DIETs		• Household based study • Test administered one-on-one in oral format	• Conducted by 30,000 volunteers from partner organizations

Curtailing dropout rates and ensuring universal access to education at all levels

"A concerted national effort will be made to ensure universal access and afford opportunity to all children of the country to obtain quality holistic education–including vocational education - from preschool to Grade 12"

– NEP, 2020

Potential causes of large dropout rates

- Lack of ECCE and FLN means many students fall behind in terms of learning curve and eventually dropout from school (NEP, 2020)

- Limited access to secondary schools and upper secondary schools (ibid)

- Socio-cultural and economic issues: early or child marriage, perceived roles of gender or caste, or child labour and pressure on children/ adolescents to work and earn (Sajjad et al, 2012)

- Parental characteristics, especially literacy of parents (M., Sateesh & Sekher, T V., 2014)

- Inadequate infrastructure and lack of safety (Bandhopadhyay, 2015)

Highlights from NEP, 2020

- The schooling system must ensure that children not just enroll but also attend school

- Through various initiatives, India has achieved near-universal enrollment in primary school. Gross Enrollment Ratio (GER) in 2016-17 for grades 1-5 was at **95.1%** (UDISE data)

- However, there are some serious issues in retaining children in the schooling system. GER for grades 6-8 was **90.7%,** while for grades 9-10 and 11-12 it was only **79.3%** and **51.3%** respectively indicating dropouts

How to bring the dropouts back to schools and prevent further children from dropping out?

NEP, 2020, advocates for two basic initiatives to be undertaken:

- Provide effective and sufficient infrastructure so that all students have access to safe and engaging school education at **all** levels (pre-primary to grade 12)

- Achieve universal participation in school by carefully tracking students and their learning levels in school. This is to ensure that students attend the school and have opportunities for **remediation** and **re-entry** if they fall behind or dropout

Curriculum and pedagogy in schools: Learning should be holistic, integrated, enjoyable, and engaging

"The curricular and pedagogical structure of school education will be reconfigured to make it responsive and relevant to the developmental needs and interests of learners at different stages of their development"

– NEP, 2020

Issues regarding current Pedagogy and Curricula

- Children in India, are on an average two grades below proficiency defined by their textbooks (Bhattacharjea, Wadhwa, Banerji; 2011)

- Current instruction practices are focused on rote based learning (NEP, 2020)

- There is a lack of access to locally relevant TLM in India, especially for marginalised communities (Kidwai et al, 2013)

- There is a lack of focus on meaning making and higher - order thinking skills in the teaching-learning process (Menon, 2014)

- The use case of assessments is not learning and improvement focussed rather punitive and high stakes (NEP, 2020)

Highlights from NEP, 2020

- The focus of curriculum and pedagogy will be to move the education system from culture of rote learning to real understanding

- Experiential learning will be adopted as standard pedagogy within each subject

- Students to be provided with increased flexibility and choice of subjects to study, especially in secondary school

- Mother tongue/ home language will be the medium of instruction at least till Grade 5 and preferably till Grade 8, wherever possible

- Introduction of contemporary subjects such as AI, Design Thinking etc. at relevant stages will be undertaken

- Assessment systems will be overhauled with shift in towards systems which are more regular, formative, competency-based, and test higher-order skills

Suggestions to tackle these issues in NEP, 2020

- Restructuring of school curriculum and pedagogy to go in a new design (5+3+3+4)

- Reducing curricular content and introducing essential skills

- Textbooks aligned to local languages and context

- Designing a new National Curriculum Framework for School Education, 2020

Evidence on the suggested curriculum reform

NEP's focus on creating a holistic, developmentally appropriate and contextually relevant curriculum can be corroborated by the growing body of research on children's learning

Bringing research to bear on different dimensions of curriculum reform

Bringing in children's local context into textbooks and learning materials

Promotes equitable learning, instruction in children's languages promotes development of higher order skills of thinking, reasoning and expression (UNICEF-LLF: Guidelines for Design and Implementation of Early Learning Programmes, 2019)

Focus on constructivism and interaction

Learning is based on interactions which is seen as an essential for cognitive growth and holistic development of the child (Vygotsky, 1978). Children bring with them experiences, knowledge and skills, that can be used to learn new concepts.

Developmentally appropriate pedagogy

It is important to pace curriculum according to children's learning levels, and students face a disadvantage with the rapid pacing of concepts related to certain skills (Menon et al., 2017)

Focus on higher order thinking skills

Unconstrained skills, which rely on children inferring meaning and go beyond the sequential acquisition of proficiency, are linked with greater learning gains in the long - term (Levya et al., 2015).

Formative assessments

Formative assessments inculcate a process of review and feedback, with a focus on continuous learning and improvement. It helps teachers' differentiate classroom instruction according to the learner's needs (Gove et al., 2016)

Mother tongue as language of instruction

Using children's mother tongue, in the first few years of schooling, as the language of instruction has been found to be extremely effective in improving children's academic outcomes (Thomas & Collier, 2002)

Teachers

"Teachers truly shape the future of our children - and, therefore, the future of our nation. It is because of this noblest role that the teacher in India was the most respected member of society"

– NEP, 2020

Some issues affecting teachers and their education

- Teacher education- curriculum and programme structure- is severely lacking (Justice Verma Commission Report, 2012; Young Lives, 2013)

- Deployment of teachers to schools is often sub - optimal (Young Lives, 2013)

- Teachers often spend **large** portions of their time on **non-teaching** activities (Puppala, 2018)

- Professional development opportunities are limited and career-progression of teachers tend not to have formal merit-based structures (NEP, 2020)

Highlights from NEP, 2020

- In India, the quality and motivation of teachers does not reach the standards where it could be. This is due to a host of factors including quality of training, recruitment, deployment, service conditions, and empowerment

- Proposes changes to all the factors that have a bearing on teachers- from teacher recruitment to career management

- Lays out an approach for teacher education with a comprehensive National Curriculum Framework for Teacher Education to be developed by NCTE by 2021

- Emphasises on the urgent need for special educators for certain areas of school education such teaching for children with disabilities

What can be done to address the issues affecting the teachers?

NEP, 2020, calls for complete overhauling of the structures of:

- Teacher education, recruitment, and deployment

- Service environment and culture, professional development, and career management

Some proposed teacher reforms in NEP, 2020

Recruitment and deployment

- Merit-based scholarships for 4-year B.Ed. programmes
- In rural preferential employment in local areas to local students upon completion of B.Ed.
- Excessive teacher transfer to be discontinued
- Teacher Eligibility Tests (TETs) to cover teachers across all stages of school education
- Hiring of 'master instructors' in various subjects by schools/ school complexes
- Technology based forecasting of teacher requirement

Service Environment and Culture

- Provide adequate and safe infrastructure at school
- More autonomy to teachers in choosing aspect of pedagogy that are most effective
- Non-teaching activities of teachers to be reduced and rationalised
- Developing a caring and inclusive culture at schools will be an explicit role expectation of principals and teachers
- Teachers will be recognized for novel approaches to teaching that improve learning outcomes of students

Continuous Professional Development (CPD)

- Provide continuous opportunities to learn latest innovations and advances in teaching
- Online platforms will be developed for teachers to share ideas and best practices
- Atleast 50 hours of CPD opportunities for teachers each year, driven by their own interests
- CPD opportunities to cover latest pedagogies regarding FLN, formative and adaptive assessments, competency-based learning, and related pedagogies
- School principals and school complex leaders will have similar workshops and online development opportunities to hone their leadership and management skills

Career Management and Progression

- A robust merit-based structure of tenure, promotion, and salary structure will be developed that incentivizes and recognizes outstanding teachers
- A corresponding rigourous performance assessment system will be developed by State/UT Governments
- Ensure that career growth is available to teachers within single school stage
- Outstanding teachers with demonstrated leadership and management skills would be trained over time to take on academic leadership positions in schools and beyond

Teacher quality and student outcomes; evidence supporting proposed teacher reforms in NEP 2020

What defines a good teacher?

"…..a good teacher is simply the one who consistently gets higher achievement from students (after controlling for other determinants of student achievement such as family influences or prior teachers)"

(Hanushek and Rivkin, 2012)

Teachers quality is crucial and is a mix of many factors

- Teacher quality in school is strongly predictive of adult outcomes - college attendance, quality of college attended, and wages (Chetty, Friedman & Rockoff, 2014)

- Pre-service teacher training and having a Master's level qualification were found to have a significant positive correlation to learner outcomes in India (Kingdon, 2006)

- A meta-review of studies from developing countries by Glewwe et al. (2011) found a positive but weak relationship between in-service teacher training and student outcomes

- Glewwe et al. (2011) find that instructional time is a key determinant of student outcomes in developing country contexts. This lends support to the argument that non-teaching tasks of teachers should be rationalised in India

- The school context- including leadership and governance of schools- has a direct impact on teachers' classroom practices and thus impacts on student outcomes (Lee et al. 2012)

- Application of the data from Education Management Information Systems (EMIS) can be effective in ensuring effective deployment of teachers (Barrett et al. 2007)

- Ensuring that composition of teaching force reflects the diversity of the learners is important. Lloyd (2009) finds that having enough female teachers in schools can be an effective strategy for increasing girls' access to basic education

- Having a teacher of the same gender and ethnic background as the learner is found to increase student outcomes (Aslam and Kingdon 2011)

Equitable and inclusive education: learning for all

"Education is the single greatest tool for achieving social justice and equality"

– NEP, 2020

Causes of exclusion and discrimination in education

NEP, 2020, identifies a host of causes of exclusion and discrimination in education:

- Under Represented Groups (URGs) often suffer from lack of access to quality schools

- Poor families find it difficult to send their children to school, even when it's accessible, due to lack of means

- Social biases significantly contribute to discriminatory practices

- Lack of access to quality schools, poverty, social mores & customs, and language are some of the factors detrimental effect on rates of enrolment and retention of students from Scheduled Castes

- Students from tribal communities often find school education irrelevant and culturally and academically disconnected from their lives

Highlights from NEP, 2020

- Considerable progress has been made in bridging gender and social category gaps in all levels of school education over the last three decades

- However, large disparities still remain - especially at the secondary level. This is particularly true for groups that have been historically underrepresented in education

- Enrollment drop-off rates are higher for URGs, with steeper decline for female students within each URG

- The central government will constitute a 'Gender-Inclusion Fund' to build the nation's capacity to provide equitable quality education for all girls as well as transgender students

- Inclusion and equal participation of children with disabilities in ECCE and the schooling system to given highest priority

What can be done to attain full equity and inclusion in schools?

NEP 2020 has some concrete propositions:

- Policies, schemes and interventions must be targeted towards URG, and female students within each URG

- Special Education Zones (SEZs) will be set up in disadvantaged regions across the country. It will be identified on the basis of social development and socio-economic indicators. Above schemes will be implemented in SEZs with additional resources from the centre and state government

Under Represented Group (URGs) in education in India

▶ While overall enrollments in schools decline steadily from grade 1 to 12, this decline is considerably more pronounced for many of these **URGs**

▶ According to U-UDISE 2016–17 data, about 19.6% of students belong to Scheduled Castes (SC) at the primary school level but this figure falls to 17.3% at the higher secondary level. These enrollment drop-offs are even more severe for ST students (10.6% to 6.8%), Muslim students (15% to 7.9%), and differently-abled children (1.1% to 0.25%), with even greater declines for female students within each of these URGs. The decline in URGs' enrollment in higher education is even steeper

Gender identities	Women	Transgender individuals			
Socio-cultural identities	Scheduled Castes	Scheduled Tribes	Other Backward Communities (OBC)	Muslims	Migrants communities
Socio-economic conditions	Urban poor				
Special needs	Learning disability	Physical disability			

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Evidence based interventions to address education inequities for (some) URGs

The NEP talks about taking into account the research that ascertains which measures are particularly effective for certain under-represented groups. For example:

▶ Providing bicycles and organising cycling and walking groups to provide access to school have been shown to be particularly powerful methods in increasing participation of female students. Even for short distances, this practice works because it provides safety benefits and comfort to parents (Muralidharan & Prakash, 2017)

▶ Peer tutoring, open schooling and appropriate infrastructure to ensure access can be particularly effective for certain children with special needs (Mahapatra, 2016)

▶ Schools having quality early childhood care and education reap the greatest dividends for children who come from families that are socially or economically disadvantaged (Heckman, 2012)

Women are especially disadvantaged

▶ The NEP highlights that women cut across all underrepresented groups and make up about one half of all other URGs

▶ Even within URGs, women are likely to face higher level of exclusion and inequities

▶ NEP recognises that women play a special and critical role in the society and in shaping social mores - not only in their own generation but in the next one

▶ Providing quality education to girls is the best way to increase the education levels for URGs in the present and future generations

▶ Thus, the NEP recommends that the policies and schemes designed to uplift students from URGs should be especially targeted towards girls in these groups

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NEP, 2020

Efficient resourcing and effective governance through school complexes/ clusters

"Although consolidation of schools is an option that is often discussed, it must be carried out very judiciously, and only when it is ensured that there is no impact on access"-

– NEP, 2020

Rationale for school consolidation

According to NEP, 2020:

- The small size of schools makes it economically sub-optimal and operationally complex, to allocate and deploy all the resources necessary to run a good school, including teachers and physical resources

- Too many small schools present a systemic challenge for governance and management

- Schools with small number of students and few teachers, are educationally sub-optimal because:

  - Optimal learning environments require a critical cohort size (about 15 at least) of same-age students

  - Even teachers work optimally in teams. At the moment, 80% of elementary schools have less than **three** teachers

Highlights from NEP, 2020

- India has near universal enrollment of children in primary schools, essentially driven by establishment of primary schools across the country through various initiatives, including Sarva Shiksha Abhiyan (SSA)

- Nearly **28%** of India's public primary schools and **14.8%** of upper primary schools have less than **30** students (UDISE 2016-17 data)

- Strategy of school expansion has greatly enhanced access, but has also resulted in many schools with small number of students

- Proposes creation of **school complexes** which will be a cluster of public schools in a contiguous geography offering education across all stages from foundational to secondary

- School complexes "will be the basic unit of governance and administration

Proposed composition of school complexes as per the NEP, 2020

- A semi-autonomous unit that will offer education from the foundational stage (age between 3 and 8 years) till grade 12 (age 18 years)

- Consist of all the public schools in its neighbourhood that offer education from pre-primary till grade 8 and one secondary school (grades 9-12)

- All schools, that are part of a complex, will be chosen due to their proximity to each other

- It will also have Anganwadis, vocational education facilities, and an Adult Education Centre (AEC) etc. associated with them

Case study: School consolidation in Rajasthan

▶ Reorganisation of schools at scale can be disruptive, especially in the short run (Beuchert et al, 2018). By changing the number of teachers available, administrative and monitoring structures, resource-use etc., the consolidation can impact the education system in the long run (Shukla, 2019)

▶ Between 2014-15 and 2018-19, around 19,500 government schools in Rajasthan were consolidated

▶ Creating Adarsh schools or large schools involved the closure of elementary schools (grades 1 to 5, grades 1 to 8, or grades 6 to 8) and their consolidation with secondary schools (with any grades from 9 to 12), especially in 2014. However, elementary schools were consolidated with other elementary schools as well, especially in 2016-17 (Bordoloi & Shukla, 2019)

▶ In Rajasthan, Bordoloi & Shukla (2019) find a greater decline in enrollment in consolidated schools compared to all government schools across the state; the decline was most pronounced for students with disability, followed by that of SC and ST students. However, the availability of teachers and facilities improved post consolidation

▶ Jharkhand, Madhya Pradesh, and Maharashtra followed in Rajasthan's footsteps and consolidated their public schools

Estimated number of Government schools across categories in Rajasthan: 2013-14 Vs 2016-17

Category	2013-14	2016-17
Primary (I-V)	48,031	33,433
Primary with upper primary (I-VIII)	22,666	20,251
Primary with U.P. & Sec. & H (I-XII)	100	9,419
Primary with U.P & Sec. (I-X)	2,206	4,186
U.P with Sec. & H.Sec. (VI-XII)	3,542	364
Upper primary only (VI-VIII)	221	194
U.P with Sec. (VI-X)	6,816	83
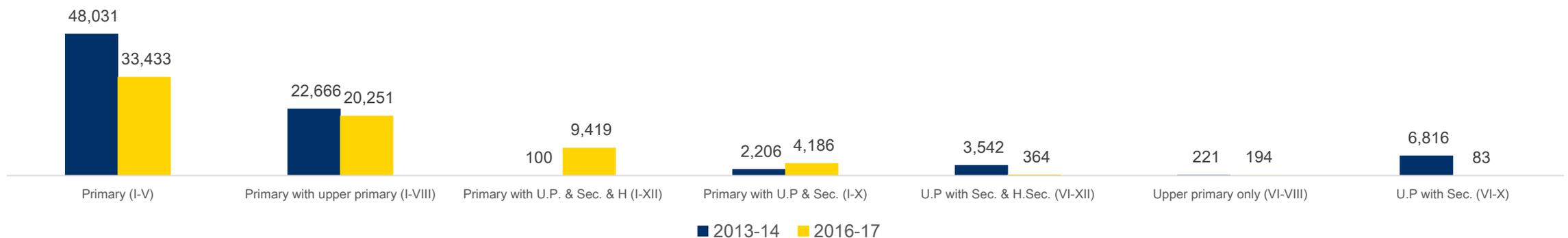
Source: Bordoloi & Shukla, 2019

Standard-setting and accreditation for school education

"The goal of the school education regulatory system must be to continually improve educational outcomes; it must not overly restrict schools, prevent innovation, or demoralize teachers, principals, and students"

– NEP, 2020

Highlights from NEP, 2020

- The regulatory and governance culture of school education in India is rigid and UDISEmpowering

- In the present structure, the three main functions of provision of public education, regulation of all educational institutions, and making policy are all handled by the Department of School Education or its arms leading to concentration of power and conflict of interest

- There is immense asymmetry between the regulatory approaches to public and private schools

- Private philanthropic efforts for quality education will be encouraged while protecting parents from arbitrary increases in tuition fees

- Public and private schools will be assessed and accredited on same criteria, benchmarks, and processes

- There is overemphasis on inputs in the current regulatory framework, this will be reviewed and rationalised

Proposed state school system architecture in NEP, 2020

Department of School Education

- Apex state-level body in school education, will be responsible for overall monitoring and policy making
- Will not be involved in provision, operation, and regulation of schools

Directorate of School Education

- Will handle educational operations and service provision for public schooling system of the whole state
- Will work independently to implement relevant policies

State School Standards Authority (SSSA)

- Establish a minimal set of standards based on basic parameters which shall be followed by schools

State Council of Educational Research and Training (SCERT)

- Will lead on academic matters including academic standards and curricula in state
- Develop a School Quality Assessment and Accreditation Framework (SQAAF) through wide consultations with all stakeholders.

RETRACTING
NO DETENTION
POLICY

Right of Children to Free and Compulsory Education (RTE) Act, 2009 and No Detention Policy

RTE ACT 2009

Children in the age group of 6-14 years the right to free and compulsory elementary education (grade 1 to 8) in a neighbourhood school

No detention policy: Up until completion of grade 8, no child can be detained in a grade even if their learning outcomes did not match their grade level

Amendment to RTE Act 2017

Regular examinations should be held in grade **5 and 8.** If the child fails in the examination, s/he will be given additional instructions to take a re-examination within two months and if the child fails again, then the state government will have the discretion to detain the child in the same grade

(Indian Parliament (Lok Sabha), Bill No. 166 of 2017)

NO DETENTION POLICY

Views in favour 👍

- Detention demotivates children resulting in increased dropouts
- Detention shifts the focus away from systemic factors that affect learning

Views against 👎

- Automatic promotion reduces incentives for children to learn and teachers to teach

Stand of various states on the no detention policy

Those in favour 👍

"The policy has reduced school dropout rates and helped in building self-esteem. States should be given freedom to decide whichever policy to follow"

Maharashtra

"It enables a child to learn better without the fear of failure, detention and stigma. CCE should be strengthened as it doesn't focus on rote learning"

Telangana

"It is important to sustain students' interest in education. Year-end evaluation should be conducted and students with low scores should be helped"

Karnataka

Those against 👎

"There is no harm in allowing a student one more year to re-cope rather than allowing her to pass to the next stage in an unbaked condition"

Kerala

"It leads to decreased commitment levels of stakeholders. Test/exam provide students with competitive spirit besides motivating them to study"

Haryana

"The policy results in undisciplined behaviour of students or increased dropouts. No-detention policy may be restricted up to grade 3"

Delhi
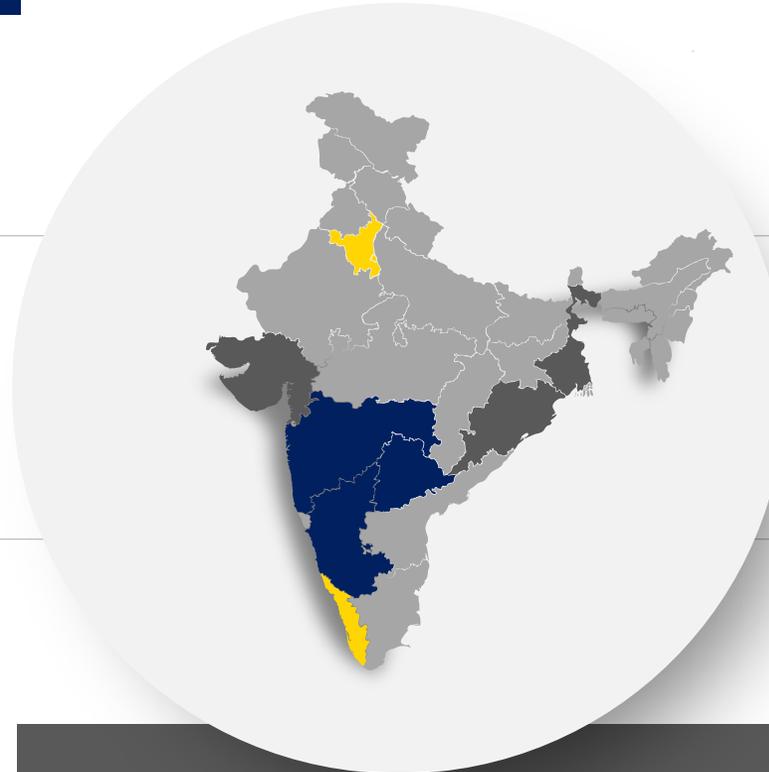
West Bengal, Gujarat and Odisha were the first states to retract the no detention policy

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What do the numbers say?

Dropout rates in school – By gender (2014-15)

Legend: Boys (dark blue), Girls (yellow)

Level	Boys	Girls
Primary (Grade 1-5)	4.4%	3.9%
Upper primary (Grade 6-8)	3.5%	4.6%
Secondary (Grade 9-10)	17.2%	16.9%
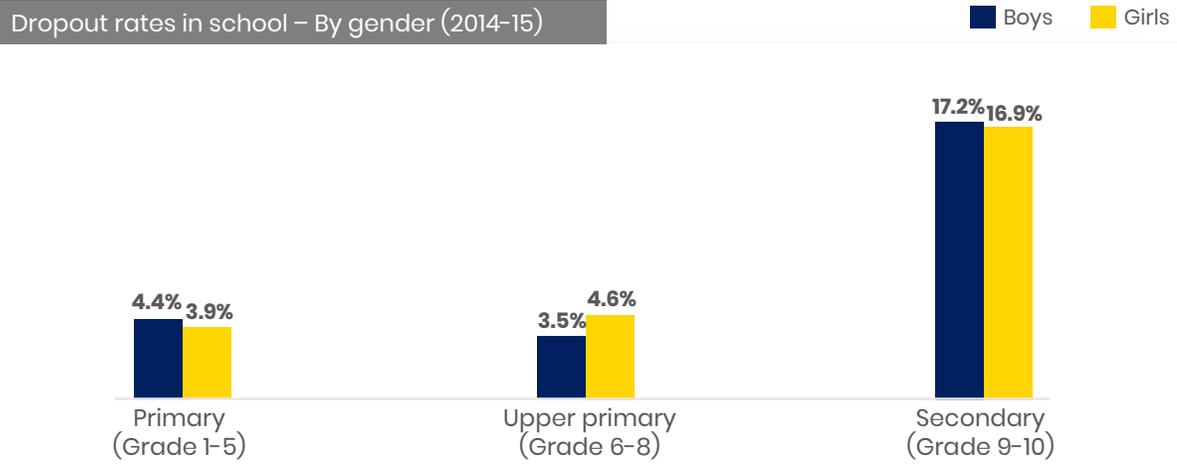
Dropout rates in school – By sub-groups (2014-15)

Legend: All (dark blue), SC (yellow), ST (grey)

Level	All	SC	ST
Primary (Grade 1-5)	4.1%	4.5%	7%
Upper primary (Grade 6-8)	4.0%	5.5%	9%
Secondary (Grade 9-10)	17.1%	19.4%	25%
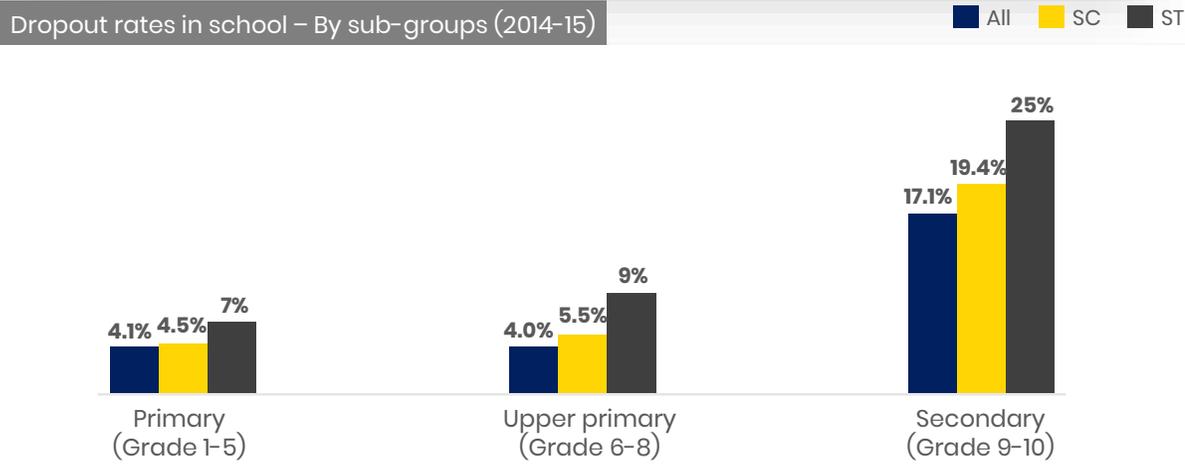
Source: Education statistics at a glance

- While enrolment has been near-universal at the primary level, there is low transition of students from one grade to another at progressively higher levels

- This has resulted in high dropouts at the secondary education level, with the highest dropout rate being **17% for grade 9-10**

- While there is some variation in dropout rates by gender, the variation is more pronounced in dropout rates by sub-groups with ST category having the highest dropout rates

- Obligation to automatically promote and not detain children in a grade under the No Detention Policy is one of the reasons for low dropouts at the elementary level

- When there is no such obligation in secondary school, grade 9 onwards, we see a significant increase in dropout rates

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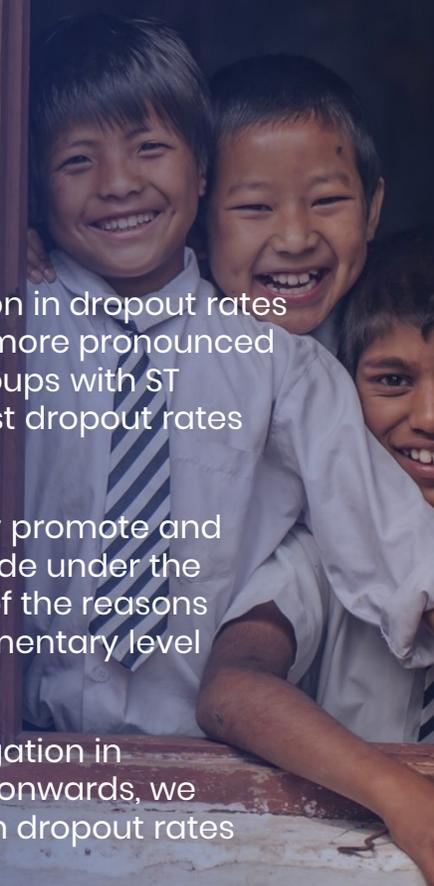
Compulsory
English Medium
in Government
Schools of
Andhra Pradesh

Move to English as medium of instruction in Andhra Pradesh (AP)*

Importance of mother tongue in schools for improving students' learning outcomes

Policy change

- Andhra Pradesh government plans to introduce English as a medium of education in all government schools in the state from the academic year 2020-21(Business Standard, 2019)

- Beginning academic year 2020-21, English will replace Telugu as the medium of instruction for grades 1 to 6 in all schools (Economic Times, 2019)

- Urdu or Telugu will be compulsory subject. Grade 7 onwards will gradually shift to English as the medium of instruction (*ibid*)

Reason behind English as medium of instruction

- Widespread belief in the populace that English-medium schooling can secure good jobs. This has fuelled the recent exponential increase in the demand and supply of English medium schools in India (Mody, 2019)

- Economically constrained families are also shifting their children from free government schools to private English-medium schools posing a threat to government teaching jobs (*ibid*)

- Many state governments are trying to contain and reverse the above trend by moving to English as medium of instruction (*ibid*)

- National Curriculum Framework (NCF, 2005) emphasises on the importance of instruction in the mother tongue in schools for improving students' learning outcomes, especially at primary education level

- Students are likely to better understand the concepts in their mother tongue. Linguistic studies suggest mastering one language facilitates learning other languages (Yadav, 2014)

- Differences in the mother-tongue and medium of instruction (English) make learning challenging for students, especially the ones from weaker socio-economic background as they are likely to lack adequate support mechanism at home to learn English

*As of 3rd September 2020, Hon'ble Supreme Court of India has refused to stay Hon'ble High Court's order against AP government order introducing English as the medium of instruction, and is examining if AP can insist on compulsory English as medium of education

Education Quality Indices in India

Overview

India has **two** different indices to benchmark and assess state performance in education:

Performance Grading Index (PGI)

Developed by the Department of School Education and Literacy (DoSEL) in the Ministry of Education (MOE), PGI is an aspirational and relatively static benchmark

School Education Quality Index (SEQI

Developed by NITI Aayog, SEQI is a dynamic benchmark set by the currently best performing state

Parameters	PGI	SEQI
Organisation	DoSEL	NITI Aayog
Coverage	All states and UTs in India	All states and UTs in India
Index components/ domains	Learning outcomes & quality, access, infrastructure, equity, and governance process	Learning outcomes, access outcomes, infrastructure outcomes, equity outcomes, and governance process outcomes
Focus	School education quality	Education outcomes
Data Sources	NAS, UDISE, MOE's Shagun MIS/ State, MDM Portal	NAS, UDISE, MOE's Shagun MIS/ State
Number of indicators	70	30 (a subset of PGI indicators)
Result	Index score for each state and UT basis which they are assigned a grade	Index score for each state and UT

Objectives of SEQI (SEQI Report, NITI Aayog, 2019)

- ▶ Developed to provide a framework to evaluate the performance of states and Union Territories (UTs) in the school education sector
- ▶ The index aims to shift the focus of education policy to improving education outcomes in respect to learning, access, equity and governance in India
- ▶ To provide a platform for the states and UTs to asses their relative performance on education outcomes, and undertake policy interventions or relevant course correction measures as required

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PGI: data and methodology

"The Performance Grading Index (PGI) is a tool to provide insights on the status of school education in States and UTs including key levers that drive their performance and critical areas for improvement"

– Ministry of Education

Summary of Index Categories, Domains and Data Sources				
Category	**Domain**	**Number of indicators**	**Total Weight**	**Data Source**
1. **Outcomes**	**1** Learning Outcomes and Quality	9	180	NAS, Shagun
	2 Access	8	80	UDISE, Shagun
	3 Infrastructure & Facilities	11	150	UDISE, Shagun MDM Portal
	4 Equity	16	230	NAS, UDISE, Shagun
2. **Governance & Management**	1 Governance Processes	26	360	UDISE, Shagun
Total		**70**	**1000**	

Performance of Indian states on PGI, 2018–19

PGI Grades

- ● Grade I+ (dark blue)
- ● Grade I (green)
- ● Grade II (grey)
- ● Grade III (yellow)
- ● Grade IV (orange)
- ● Grade V (teal)
- ● Grade VI (dark grey)
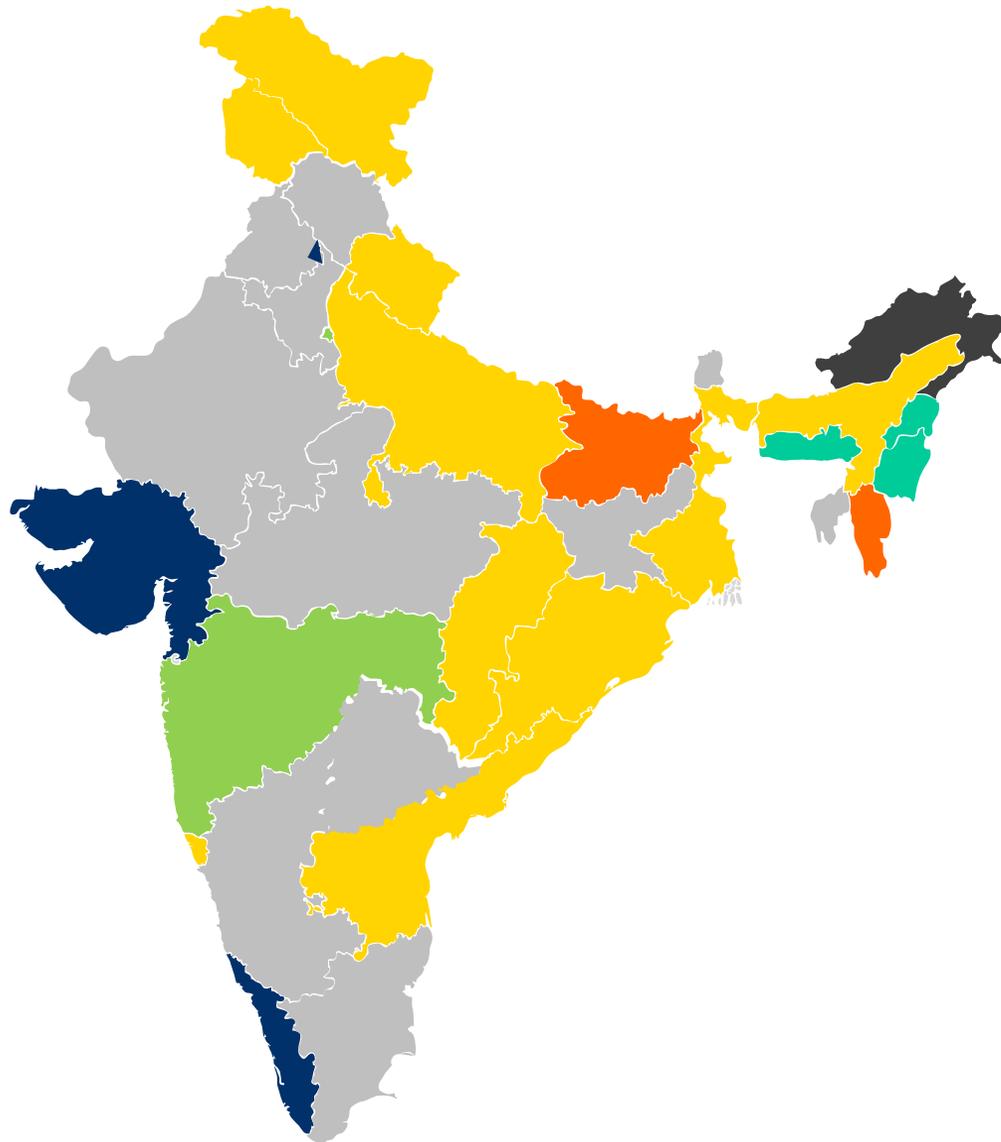
Domain	Top-domain wise achievers
Learning Outcomes & Quality	▪ Rajasthan (168/180) ▪ Chandigarh (160/180) ▪ Karnataka (160/180) ▪ Jharkhand (156/180)
Access	▪ Kerala (79/80) ▪ Haryana (78/80) ▪ Delhi (77/80) ▪ Andhra Pradesh (77/80)
Infrastructure & Facilities	▪ Goa (137/150) ▪ Chandigarh (136/150) ▪ Delhi (130/150) ▪ Punjab (128/150)
Equity	▪ Delhi (220/230) ▪ West Bengal (217/230) ▪ Dadar & Nagar Haveli (217/230) ▪ Gujarat (213/230)
Government Processes	▪ Gujarat (315/360) ▪ Chandigarh (310/360) ▪ Kerala (296/360) ▪ Odisha (282/360)

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SEQI: data and methodology

"SEQI is based on a set of indicators that measure the overall effectiveness, quality and efficiency of the Indian school education system"

NITI Aayog, 2019

Summary of Index Categories, Domains and Data Sources				
Category	**Domain**	**Number of indicators**	**Total Weight**	**Data Source**
1. **Outcomes**	**1.1** Learning Outcomes	3	360	NAS
	1.2 Access Outcomes	3	100	UDISE, MOE's Shagun MIS/ States
	1.3 Infrastructure & Facilities for Outcomes	3	25	UDISE
	1.4 Equity Outcomes	7	200	NAS
2. **Governance Processes Aiding Outcomes**	Covering student and teacher attendance, teacher availability, administrative adequacy, training, accountability and transparency	14	280	UDISE, MOE's Shagun MIS/ States
Total		**30**	**965**	

SEQI overall performance score: large states

▶ The overall performance score for large states ranged from **76.6%** for **Kerala** to **36.4%** for **Uttar Pradesh**

▶ Out of the 20 large states, **18 improved** their overall performance score between 2015-16 and 2016-17

Figure A : Large States: Overall and category – wise performance, 2016–2017

● Overall Performance ● Outcomes Category ● Governance Process Aiding Outcomes Category

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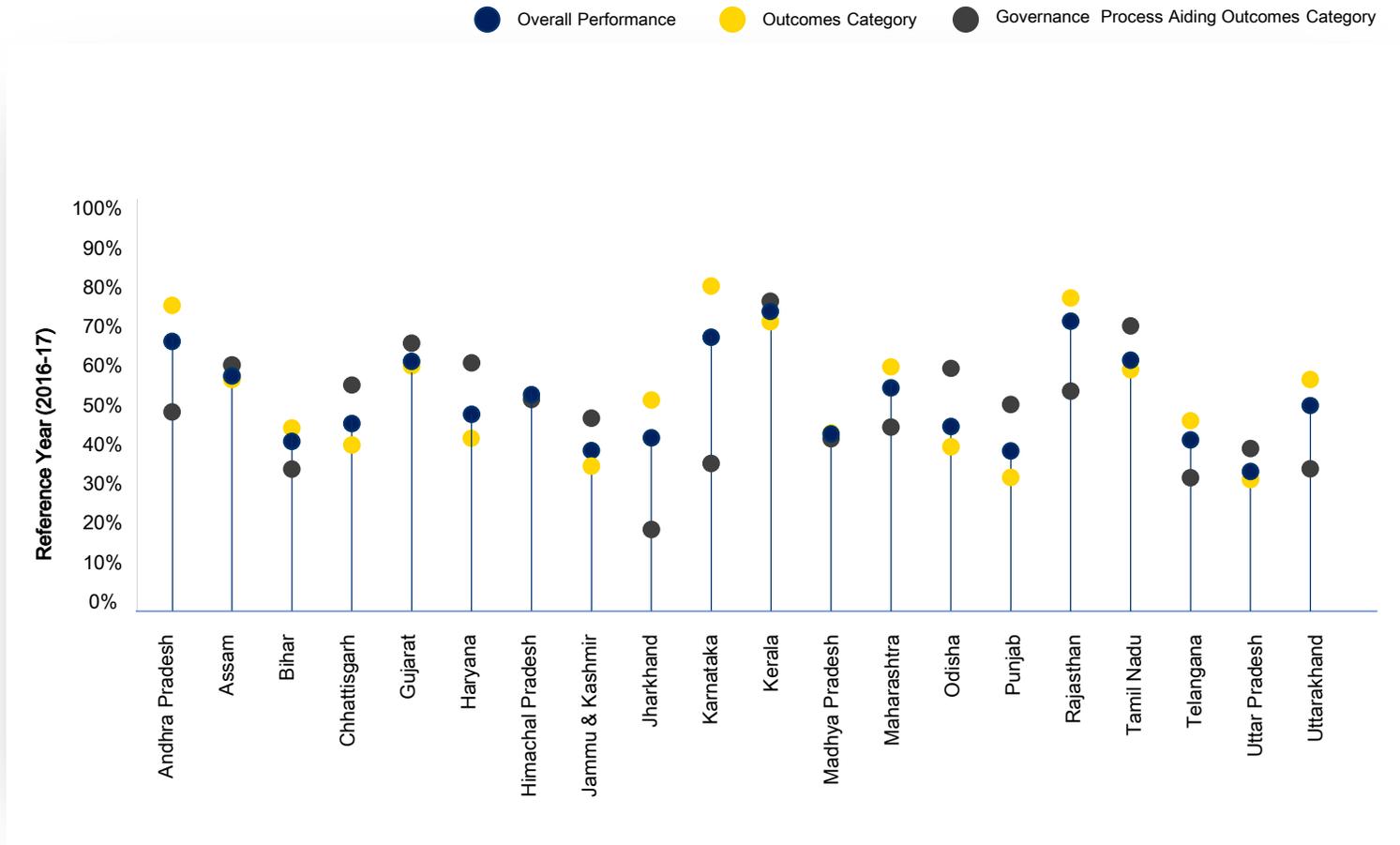
SEQI overall performance score: large states

▶ Among **small states**, the overall performance score varied from **68.8%** for **Manipur** to **24.6%** for **Arunachal Pradesh**

▶ In **UTs**, the overall performance score ranged from **82.9%** for **Chandigarh** to **31.9%** for **Lakshadweep**

Figure B:Small States and Uts: Overall and Category wise performance,2016-17

● Overall Performance ● Outcomes Category ● Governance Process Aiding Outcomes Category

Small states

Union Territories

Note: The Outcomes Category score for Himachal Pradesh is 55.6 Percent and Meghalaya is 46.0 percent

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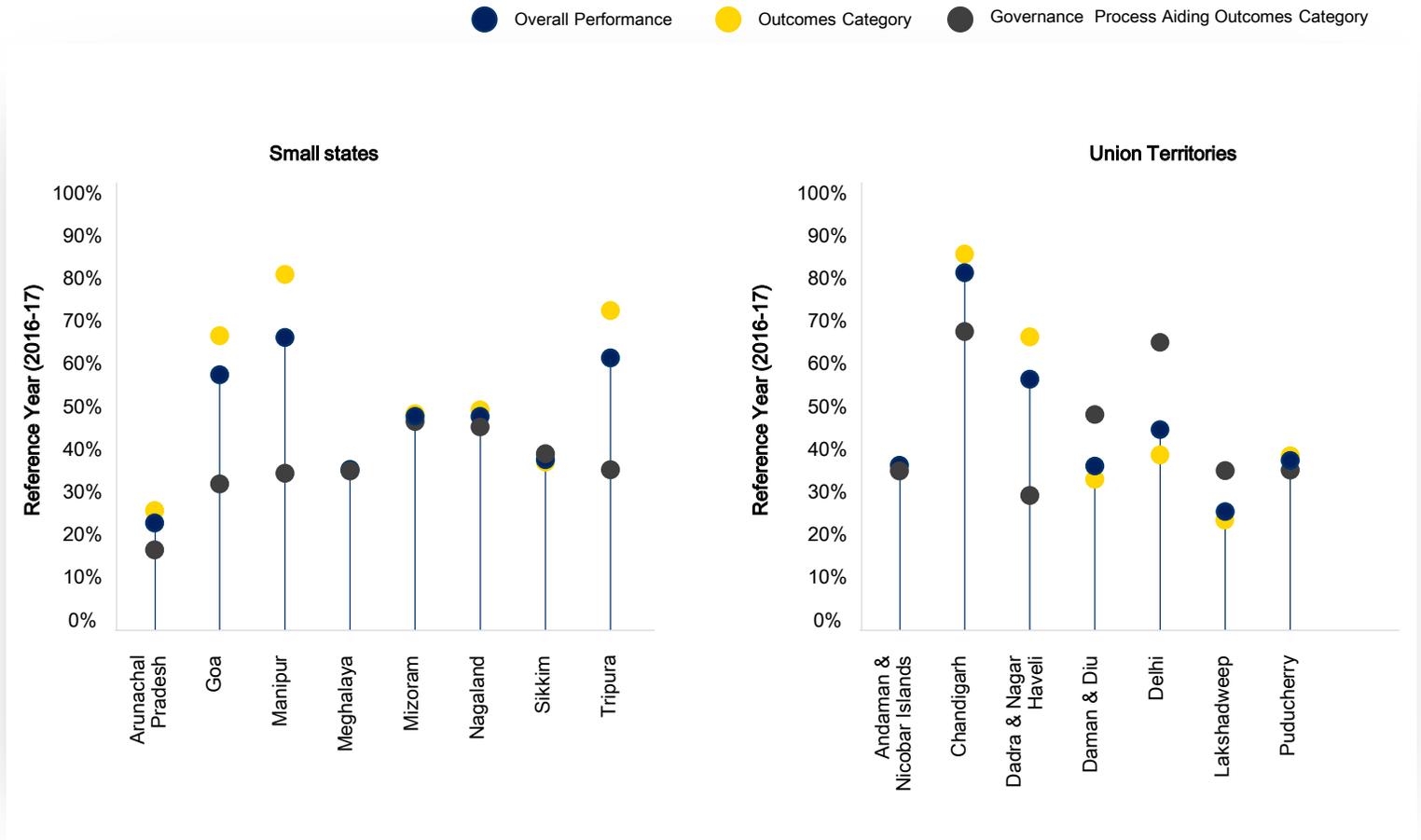
How Brazil created basic education quality index

Indice de Desenvolvimento da Educação Básica (IDEB)

Introduced by the Brazilian Ministry of Education in 2007

For systematic monitoring of basic educational progress in every school, municipality, state and federal district, and region of Brazil

Combined measure of student learning results and student flows-grade progression, repetition, and graduation rates

IDEB in focus

- IDEB builds on Prova Brasil- Brazil's biennial national learning assessment in math and Portuguese for grade 4 and 8 students

- The innovation lies in the construction of the index which combines Prova Brasil test results with administrative data on school enrollment, repetition, and promotion (Bruns, Evans & Luque, 2012)

- The design of the index discourages schools from automatic promotion of children who are not learning in order to improve their performance on the index (*ibid*)

- The IDEB has quickly become the key metric for assessing the relative performance of both individual schools and municipal and state systems (*ibid*)

- The results of IDEB are widely reported in the media, and are used by the federal government to establish targets for improvement of primary and secondary education results for each of Brazil's 26 states (and federal district) and 5,564 municipal school systems (*ibid*)

Examples of IDEB's impact

- IDEB has facilitated the implementation of teacher bonus programs at both state and municipal levels (Bruns, Evans & Luque, 2012)

- Although different state and municipal programs in operation have various design features, all are based on annual targets for improvement in **IDEB metrics** (*ibid*)

Overall, IDEB has created a powerful platform for comparative analysis of state (and federal district) and municipal innovations in basic education (*ibid*)

India's re-entry into Programme for International Student Assessment (PISA)

India will participate in the Programme for International Student Assessment (PISA) in 2022 after a gap of 13 years

The HRD Ministry signed an agreement with the OECD, which conducts PISA, confirming India's participation in the triennial international survey that assesses 15-year-old students in reading, mathematics, science and collaborative problem-solving (Business Standard, 2019)

3 hour long PISA test(2022)

1.75 lakh — **Students** from government schools in Chandigarh

600 — **Navodaya Vidyalayas**

3000 — **Kendra Vidyalayas**

A team of PISA officials will conduct a trial test in the participating schools in 2021

India's previous experience with PISA

▶ India participated in PISA in 2009. The assessment was done in two states Himachal Pradesh and Tamil Nadu (Rana, 2019)

▶ India fared poorly coming **second to last** amongst the 73 participating countries (*ibid*)

▶ Reports suggest that officials from the NCERT learnt that students performed poorly particularly in the mathematics segment of the PISA test (*ibid*)

What can India learn from PISA?

▶ PISA can help in improving the education system in India. It would act as a diagnostic to better understand the shortcomings of the existing system (Mehta, 2019)

▶ In addition, participating in PISA would also allow India to benchmark itself relative to 88 other countries worldwide (*ibid*)

▶ NAS, India's own survey to assess its education system, is moving towards testing for competency-based learning. PISA can compliment NAS

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What is PISA?

The most well known international assessment of learning outcomes

The first PISA study was carried out in 1997 and since then it is held every three years. It is administered to 15-year-old school students

PISA emphasises on the reading, mathematics and science skills that students need in their everyday lives when they pursue post-secondary education or enter the workforce

Test items are adapted to the local context and language, pilot tested and validated

PISA tests students on three different dimensions

PISA 2015 assessment and analytical framework define these dimensions as (OECD, 2015)

- **Science literacy** is defined as the ability to engage with science-related issues, and with the ideas of science, as a reflective citizen

- **Reading literacy** is defined as students' ability to understand, use, reflect on and engage with written texts in order to achieve one's goals, develop knowledge and potential, and participate in society

- **Mathematical literacy** is defined as students' capacity to formulate, employ and interpret mathematics in a variety of contexts. It includes reasoning and using mathematical concepts, procedures, facts and tools to describe, explain and predict phenomenon

Cross-country comparability of the PISA results is limited

- The assessment results for non-OECD countries are not directly comparable with OECD countries in PISA

- Often for non-OECD countries in PISA, the student sample is chosen from a select regions within that country and hence is not nationally representative

- For example, results reported for China are based on assessments in only four Chinese provinces including Beijing, Shanghai, Jiangsu and Guangdong

PISA: objective, criticism, and recent changes

> **"The aim with PISA was not to create another layer of top-down accountability, but to help schools and policy makers shift from looking upwards within the bureaucracy towards looking outwards to the next teacher, the next school, the next country."**
> - Andreas Schleicher, Director for the Directorate of Education and Skills, OECD

PISA's influence

- ▶ Volante (2017) conducts a cross-cultural analysis which suggests the influence of PISA is growing around the world

- ▶ Assessment systems of countries such as Germany and Canada have been developed to mirror the PISA test (Volante et al, 2019)

- ▶ Governments often juxtapose PISA results with other social outcome measures such as equity in education, social mobility or immigrant success for policy decision (*ibid*)

Criticisms of PISA

- ▶ Critics contend that PISA tries to do too much, distorts what is important, and creates an arms race in education (Andreson & Shendruk, 2019)

- ▶ PISA creates an over-reliance on testing and a tendency to recommend simple solutions for complex problems (*ibid*)

- ▶ In 2014, more than 100 academics around the world called for a moratorium on PISA testing (Gaurdian, 2014)

Changes in PISA

- **2015** — In order to reduce the measurement error, the OECD changed the model on which previous PISA scores were based (Volante et al, 2019)

- **2015 & 18** — The test covered new areas such as collaborative problem solving, financial literacy and global competence (*ibid*)

- **2021** — PISA will include an assessment of creative thinking (OECD, 2019)

Can student assessments spur reform?

- Whether testing and assessment can be used as tools to leverage systemic improvements in the education system leading to improved learning is a matter of debate

- Detractors contend that high stake tests are inappropriate (Koretz, 2017) and growing trend of student testing has been damaging to schooling (Hout & Elliott, 2011). However, others argue that increased testing is important for improving educational and economic outcomes (World Bank, 2018; Hanushek and Woessmann, 2014)

- Students in school systems, that have an external exit exam combined with local autonomy, perform better on internationally comparable tests (Woessman, 2018)

- On the contrary, cross-country analysis by Bergbauer et al (2018) suggests that autonomy without testing leads to worse performance on the tests which suggests that only informed demand from parents can make a real difference

Brazil's average PISA scores improved (2000–2009)

4% | **In Reading** (From 396 in 2000 to 412 in 2009)

8% | **In Mathematics** (From 356 in 2003 to 386 in 2009)

3% | **In Science** (390 in 2006 to 405 in 2009
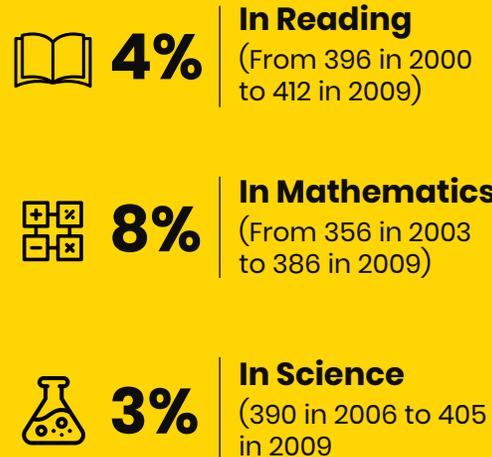
OECD, 2011

Case study
Education reforms in Brazil

Brazil has simultaneously expanded schooling coverage and learning over the past 15 years through a host of educational reforms

- Country's national assessment was benchmarked to PISA and has shown considerable improvement since 2000

- Steep gains achieved since 2005 when the national assessment began testing every student, and the government, media, and civil society groups began actively publicizing the results (OECD, 2011)

- In 2005, Basic Education Development Index was introduced allowing parents to compare school achievement and promotion on a 10-point scale aligned with the country's PISA scores (*ibid*)

- The country reformed its school funding, educational requirements, and teacher pay and bonuses (OECD, 2015)

- 12 years of schooling was made mandatory, curricula was redesigned and longer school days were promoted (*ibid*)

- The reforms fostered greater accountability, especially in some of the poorest states of Brazil (OECD, 2011)

2

Government initiatives in school education*

*The initiatives included here are not an exhaustive list. Union and state governments have launched a number of education initiatives beyond those covered here. Through extensive discussions with experts in the field, we have chosen initiatives that cover a spectrum of national and state initiatives across training, data, and reform programmes that are large scale and innovative in our subjective view.

Unified District Information System for Education Plus (UDISE+)

▶ **An online first system, it will gradually move towards collecting data in real time**

▶ **One of the largest MIS of its kind in the world**

18 Lakh
Schools

85 Lakh
Teachers

25 Cr
Students

28
States

08
UTs
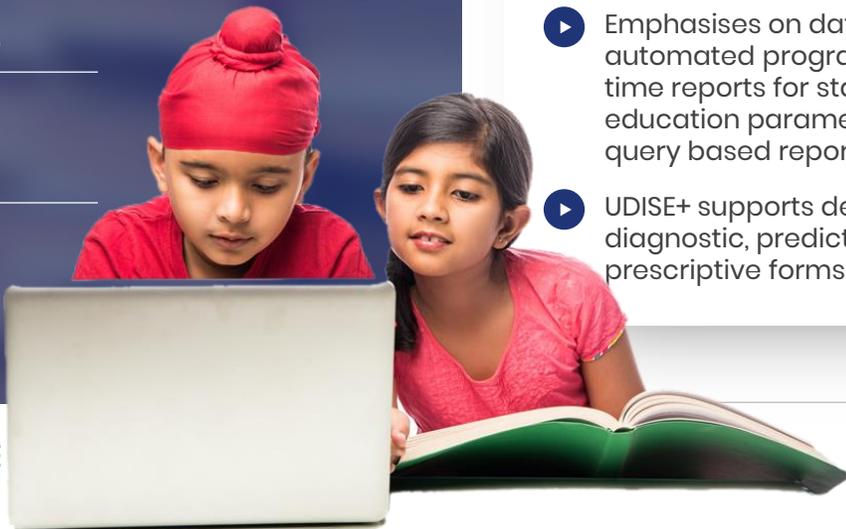
Features of UDISE+

UDISE+ is envisaged to address the limitations of UDISE making it more robust. It's a result of an extensive consultation process with stakeholders and experts. Important features according to UDISE+ booklet, 2019:

▶ DCFs were rationalised and online uploading of data was made possible establishing clear traceability

▶ UDISE+ is hosted on the server of NIC which also has the responsibility of its overall supervision

▶ Integrates geo-spatial database with UDISE+ data allowing GIS School Mapping

▶ To ensure accuracy of data, UDISE+ provides for an app for third-party verification of the information

▶ Emphasises on data analytics with an automated programme generating real time reports for states and UTs on education parameters, and supporting query based reports and charts

▶ UDISE+ supports descriptive, diagnostic, predictive and prescriptive forms of data analytics

Limitations of UDISE and need for UDISE+ (UDISE+ booklet, 2019)

▶ Offline data collection system affecting the quality, reliability and timeliness of the data

▶ Absence of audit trail led to lack of accountability

▶ Single data collection form (DCF) for all categories of schools leading to confusion and inconsistencies

▶ Limited verification of UDISE data and lack of analysis of verification data for remediation

▶ Over time, coordinating and supervising UDISE became difficult for NIEPA as it lacked the requisite infrastructure, resources and expertise to keep up with increasing number of schools nationwide

▶ Multiple versions of data collection software used by the many states and UTs

MOE Launches
DIKSHA platform

In 2017, the Ministry of Education (MOE) launched a digital education portal Digital Infrastructure for Knowledge Sharing, or DIKSHA, to connect teachers and amplify solutions in the realm of their education

Teachers can create, upload, and view digital content relevant to their syllabus, and use it to enhance student learning (and attention)

QR-code imposed textbooks were introduced for students of grade 9 and 10. The QR codes were placed at hard spots identified by subject experts

DIKSHA in focus

- ▶ DIKSHA's objective is to connect teachers across India and enable them to create, share, and verify educational content

- ▶ It also provides them with training modules, serving as a one-stop shop for all teacher-related services

- ▶ Initially geared towards teachers, access to DIKSHA is not limited to them; any Indian citizen with an email address can view the platform's content (Ramanujam, 2019)

- ▶ QR code-enabled textbooks, called Energised Textbooks or ETBs, allow students to access digital content through an internet enabled smartphone

- ▶ Each QR code is linked to a DIKSHA-hosted content module, which could be an animation, video or a quiz, to help students learn specific concepts (Ramanujam, 2019)

- ▶ ETBs make learning interesting and promotes a culture of self-learning among students (The Hindu, 2020)

Some snippets of states' adoption of ETBs

- ▶ In Andhra Pradesh, ETBs will be used for grade 6 to 10 in English and Telugu, with more than seven million books under publication (Pandey, 2018)

- ▶ Maharashtra and Uttar Pradesh are adopting ETBs for all subjects for grade 1 to 10 and grade 1 to 8 respectively (*ibid*)

- ▶ In 2018, Tamil Nadu rolled out QR code embedded textbooks for grades 1, 6, and 9 (Ramanujam, 2019)

- ▶ Kerala plans to introduce ETBs for grade 8 to 12 in 2021(The Hindu, 2020).

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MOE Launches

NISHTHA Programme

National Initiative for School Heads and Teachers' Holistic Advancement

(Centrally Sponsored Scheme of Samagra Shiksha in 2019-20)

A national mission to improve learning outcomes at the elementary level through an Integrated Teacher Training

Objective

- Motivate and equip teachers to encourage and foster critical thinking in students leading to improvement in their learning outcomes (PIB, 2019)

- The functionaries shall be trained on learning outcomes, school - based assessment, learner-centred pedagogy, new initiatives in education, addressing diverse needs of children through multiple pedagogies etc (*ibid*)

- In addition, a MIS for delivery of the training, monitoring and support mechanism will also be integrated with this capacity building initiative (NISHTHA website, 2019)

- Trainings will be conducted directly by 33,120 Key Resource Persons (KRPs). The KRPs will be trained by 120 National Resource Person identified from NCERT, NIEPA, Kendriya Vidyalaya Sangathan, CBSE, NGOs etc (Livemint, 2019)

Coverage

According to a government press release, NISHTHA aims to build the capacities of around 42 lakh participants in all states and Union Territories (UTs) covering:

- All teachers and heads of schools at the elementary level in all government schools

- Faculty members of State Councils of Educational Research and Training (SCERT)

- District Institute of Education and Training (DIETs)

- Officials and resource persons from Block Resource Centres (BRCs) and Cluster Resource Centres (CRCs)

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NITI Launches
SATH-E
Sustainable Action For Transforming Human Capital in Education

Aims to systematically reform school education and create model states of transformation

Implemented in three - phases over a period of 30 months, the programme is scheduled to conclude in 2020

The SATH-E programme

- ▶ NITI Aayog launched SATH-E to identify three model states which could be potential benchmark for school education in India

- ▶ Out of 16 states that went through a three-step selection process based on the Challenge Method, three states- Jharkhand, Madhya Pradesh and Odisha- were selected for the project implementation (PIB, 2018)

- ▶ SATH-E is implemented in these states through a tripartite agreement which includes state governments, knowledge partners Boston Consulting Group and Piramal Foundation, and NITI Aayog (NITI Aayog Annual Report, 2019-2020)

- ▶ A review by National Steering Group of Project SATH-E has found that programme interventions have resulted in an improvement in learning outcomes across all three states (*ibid*)

Some critical interventions of SATH-E
(NITI Aayog Annual Report, 2019-2020)

- ▶ The implementation of large-scale learning enhancement programmes

- ▶ School merger and consolidation

- ▶ Teacher recruitment and rationalization

- ▶ System-wide training and monitoring programmes

- ▶ Strengthening of the management information systems (MIS)

- ▶ Boosting competition through district-wise scorecards

- ▶ School certification programmes

Education reforms by Delhi government

Since 2015, Delhi Government has undertaken a host of reforms in school education

▶ These reforms are constituted of a complementary set of interventions targeted towards different stakeholders in school education. Specifically, the interventions have been targeted towards students, principals and teachers, school community and infrastructure

– **Here we focus only on intervention for students since 2018**

Curricular reforms for students

Mission Buniyad

Launched in 2018 with an aim to improve learning levels of students attending grade 3 to 8 in the state government and municipal schools in Delhi (Govt. of Delhi, 2018). Due to substantive improvements in learning levels due to the programme, it was repeated in 2019 (Baruah, 2019).

Happiness curriculum

Focuses on holistic education by including meditation, value education, and mental exercises in the conventional education curriculum from nursery to grade 8 in all Delhi government schools (Govt. of Delhi, 2018).

Entrepreneurship mindset curriculum

Implemented in government schools of Delhi from grade 9 to 12 in order to build awareness and knowledge of various aspects of entrepreneurship amongst students. The programme is based on an activity based curriculum developed by SCERT (Education Times, 2019) and includes interaction with Delhi-based entrepreneurs (India Today, 2019)

Enabling conditions for reforms

▶ Increased budgetary allocation to the education sector; 26% of 2019-20 Delhi budget was allocated to this sector (India Today, 2019)

▶ Development of school and support infrastructure at scale between 2015-18 (Outlook, 2019)

▶ Revival of School Management Committees (SMCs) to engage with the community (The Hindu, 2020)

▶ Enhanced training, support and career development opportunities for teachers (*ibid*)

Mission Prerna

A flagship programme of the **government of Uttar Pradesh**

Improve the quality of education in **1.6 lakh** schools

Focus on basic **teaching skills**

Students' **learning outcomes**

- UP has always performed poorly in the ASER survey which measures learning levels of children in language and mathematics

- Mission Prerna envisages to address the issue of low learning outcomes in UP. Gupta (2020) documents the **Mission Prerna process**

Prerna Lakshya

'Prerna Lakshya' which are grade-wise measurable learning goals are established for Hindi and mathematics. These goals include word identification, reading speed, reading comprehension, number identification and basic arithmetic operations etc

Prerna Soochi & Prerna Talika

To mark and track the progress of each child in the grade, teachers will be provided with grade-wise Prerna Soochi and Prerna Talika

Prerna Ghoshna

When the Block Education Officer (BEO) is confident that students of their respective block are ready for the Prerna Lakshya, s/he will self-nominate the block through Prerna Ghoshna for an independent third-party evaluation of the learning levels of the children in the block

Prerna Block

The block will be designated Prerna Block contingent on the outcome of the above evaluation

Prerak Block	Prerak District	Prerak Division	Prerak Pradesh
When **80%** of students in all schools in the block achieve Prerna Lakshya	When all the blocks of the district achieve Prerna Lakshya	When all the districts achieve Prerna Lakshya	

3

Education in the times of COVID-19
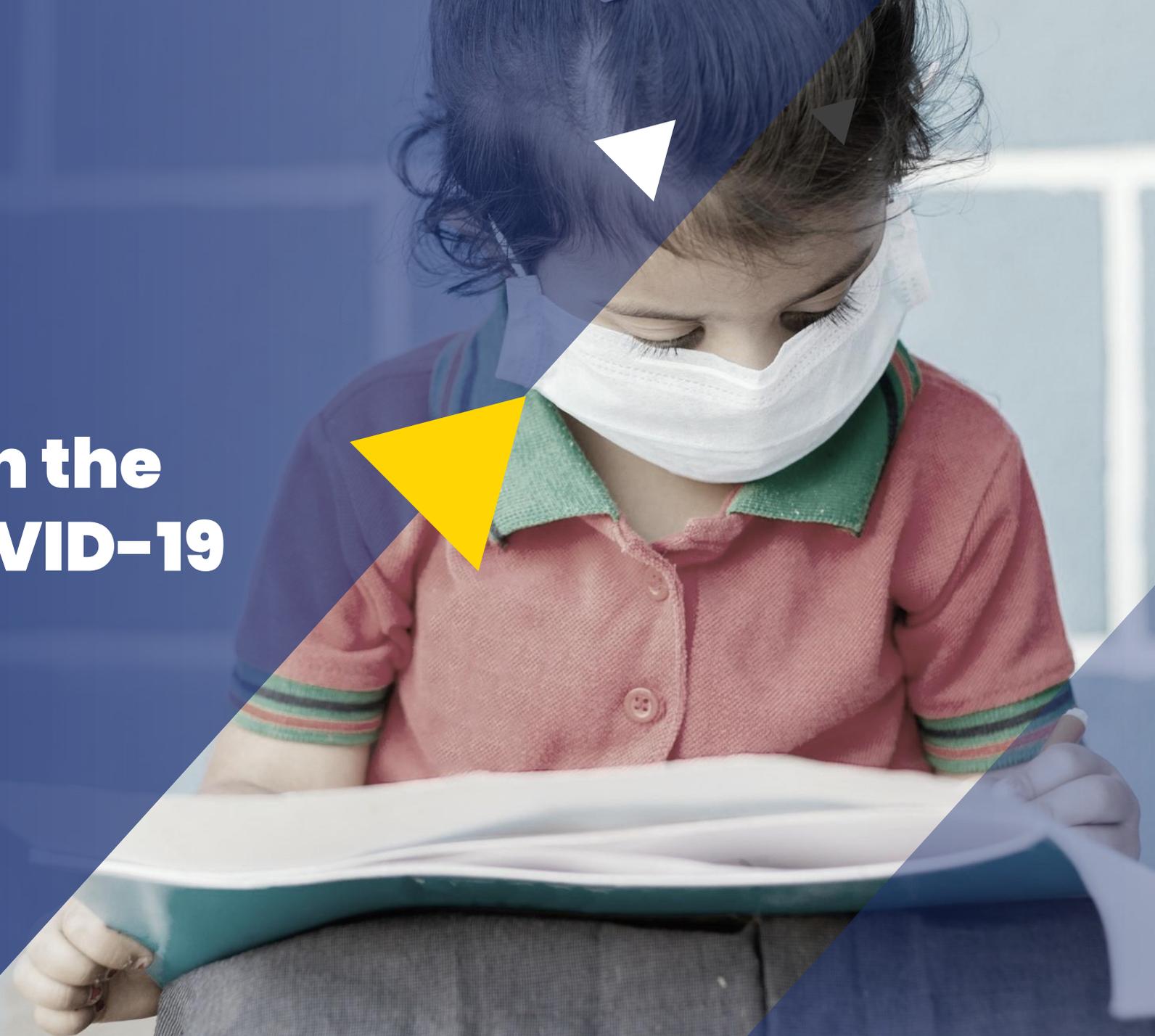
COVID-19 and school closures worldwide

Global monitoring of school closures caused by COVID-19

● **Localized** ● **National** ● **Open**
(Source: Humandata.org, as of 20th July 2020)
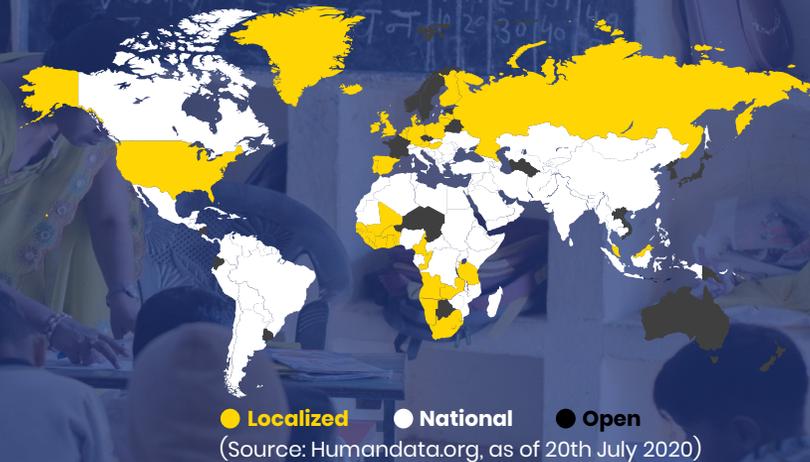
Global monitoring of school closures due to COVID-19

Country-wide closures in **168 countries**

Have affected about **1.2 billion** learners worldwide

Almost **71%** of the total enrolled learners

Potential impact of COVID-19 on education

World Bank (2020) highlights potential impacts of school closures due to the pandemic on school education:

- ▶ While school closures may cause imminent loss of learning in the short - term, extended school closures may translate to loss of human capital and diminished economic opportunities over the long - term

- ▶ Impact on education would be most detrimental in countries with fragile education systems characterised by low learning outcomes, high dropout rates, and low resilience to shocks

- ▶ Most vulnerable students are likely to be worst hit by school closures as they have fewer opportunities to learn at home

- ▶ Poor households may not have the resources for prolonged childcare or even adequate nutritious food for children in the absence of school meals

How are countries coping?

- ▶ Most countries are exploring options for remote or distance learning and use of other educational resources to mitigate loss of learning (World Bank, 2020)

- ▶ This involves capitalizing on work on EdTech that has been evolving in the recent years. However, challenge of equity of access to remote learning resources remain

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COVID-19 spurred online learning in India; challenges to access remain

In wake of school closures due to COVID-19, more than 50 countries have announced plans for implementing distance learning through internet, TV, or radio

India

▶ School closures due to the lockdown has affected schools' academic cycles, board examination dates and college entrances for the next year

▶ There is a push towards deploying technology for instructional purposes

▶ Online learning portals such as SWAYAM or E-Pathshala and the integration of traditional distance education programmes via internet have taken centre stage

Challenges of online learning

▶ Online learning is the most common form of distance learning emerging as countries transition to remote learning strategies. However, access to internet is a key challenge

▶ Less than **40%** households in low and lower-middle income countries have access to internet (Carvalho & Hares, 2020)

▶ Tech-intensive bridging solutions have limited reach, especially among government and elementary school students (Choudhary, 2020)

▶ The reach of EdTech solutions might further decline if the pandemic is accompanied by an economic shock, as low income households might not be able to afford internet packages

Type of distance learning planned — by income group (Low, Lower Middle, Upper Middle, High); categories: Online, TV, Radio, Send work from home, No distance learning plan
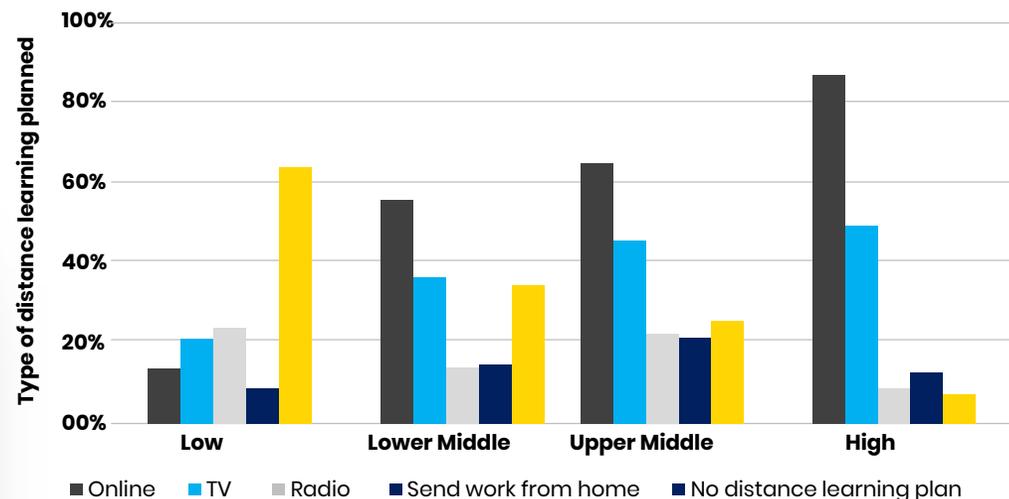
(Source: Caravalho & Crawfurd, 2020)

Whether a country has announced plans for distance learning is highly correlated with income

▶ 85% of high-income countries have announced plans for distance learning opportunities, compared to just 15% of low-income countries.

▶ In sub-Saharan Africa, only 4 out of 30+ countries that implemented mass closures have announced distance learning plans for primary and secondary education; these are Kenya, Senegal, Seychelles, and South Africa

Mitigation of disruption to mid-day meals during school closures

Mid-day meal (MDM) scheme benefits more than 11.5 crore students throughout the country

All primary and upper-primary students in government, government-aided and local body schools, several school types under Sarva Shiksha Abhiyan, and National Child Labour Project (NCLP) schools run by Ministry of Labour are eligible for the MDM scheme

In view of school closures due to COVID-19, the union ministry has asked states and UTs to provide cooked mid-day meals or a food security allowance to all eligible students during school closures

Disruption of mid-day meals and response of some states (March/April 2020)

Jammu & Kashmir
Punjab
Haryana
New Delhi
Uttarakhand
UP
Bihar
Assam
West Bengal
Karnataka
Andhra Pradesh
Kerala

● Providing dry rations

● Direct Benefit Transfer to bank accounts

● Mid-day meals provided at home
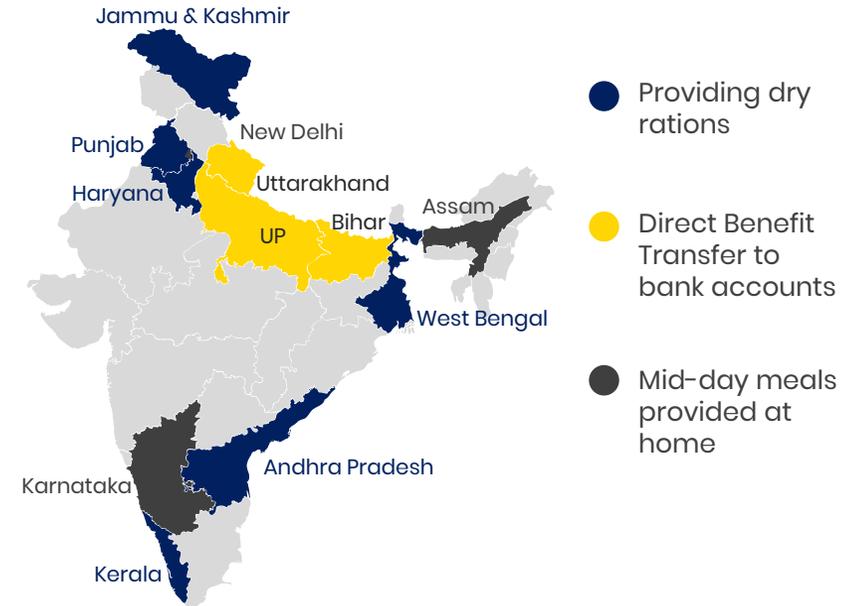
Operationalisation of the distribution of mid-day meals

▶ For the distribution dry rations for mid-day meals, many state governments have relied on the services of teachers, anganwadi workers, and volunteers

▶ Reports suggest that provision of cooked mid-day meals has been challenging for states

Response of Indian states to disruptions in education due to COVID-19 lockdown

Response of Centre and State Governments

- Online learning, through virtual classes, phone-apps and/or web-based educational portals, has become key strategy by states to provide learning at home during school closures due to COVID-19

- In May 2020, the finance minister announced **PM eVidya** programme for multimode access to digital/ online education which, amongst other initiatives, will include one earmarked TV channel for each grade from 1 to 12 (Times of India, 2020)

- Cognizant of the issue of access, states have augmented their online learning initiatives with radio and TV based programmes, SMS, and IVRs

- WhatsApp has become an important medium for learning in many states where teachers engage with students and their parents through voice and text messages, including conducting assessments through the app

Structural issues limiting efficacy of EdTech

- Access to electricity, computer and smartphone is limited with significant variations across states in India

- NSSO Report on Education (2017-18) indicates that 24% of Indian households have an internet facility. Moreover, only 8% of all households with members aged between five and 24 years have both a computer and an internet connection (Kundu, 2020)

- Large gender disparities in access to internet- 67% men had access to internet whereas this number was only 33% for women (Kala, 2019)

- Online teaching requires a skill set that is not a part of current teacher training curriculum. Thus, a large proportion of current teachers are inept at imparting online learning

- Adapting to online education is easier for English medium schools relative to schools with vernaculars as medium of instruction which comprise a large proportion of total schools in India (Kalra, 2020)

How private schools adopted EdTech in responding to school closures?

- Similar to states' response, many private schools across the country have moved to online or virtual classes which take place through Google Meet, Zoom, WebEx or other web-based platforms

- Reports suggest that there is a large variation amongst schools in the quality of content delivered through the virtual classes ranging from structured classes to just sharing PowerPoint presentations with the students

- Teachers from private schools working with limited access to digital infrastructure are using Whatsapp to engage with students and parents

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States leveraged digital, TV and radio to mitigate learning loss; some case studies*

Madhya Pradesh

DigiLEP — **Digital Learning Enhancement Program**

Provides learning opportunities for students in grade 1 to 12 over WhatsApp covering all competencies for major subjects. WhatsApp architecture has been designed to operationalise this programme

CM Rise

Digital teacher training programme through DIKHSA

Top Parent App

The app, which in turn hosts three high quality edtech apps for early grade children, allows parents to track the child's performance and contribute towards their education

Radio School

A state-wide programme, launched in collaboration with All India Radio, is broadcasted for one hour each day and covers stories and academic programs focused on grades 1-8

DD MP – Classroom

Partnered with DD MP to telecast special educational TV program, "Class Room" for grade 10 and 12. This programme is aired twice-a-day, five days a week (Times of India, 2020)

Uttar Pradesh

Gupta (2020) documents that Uttar Pradesh is taking a multi-pronged approach with following elements:

e-Pathshala

Through e-Pathshala, the state government is disseminating educational content among students through smartphones. To do so, it is leveraging the existing network of WhatsApp groups at district, block and school levels

DIKSHA

Intensify the usage of content uploaded on DIKSHA platform. Three featured content categories in the Diksha app include TicTac Learn, Khan Academy, and content from Pratham Education Foundation

Top Parent App

Use of Top Parent App and the three high-quality edtech apps such as Chimple, Math Masti and Bolo- for early grade children is being encouraged

DD-UP

For students without access to smartphones, educational content is being disseminated through DD-UP, All India Radio, and community radio

Kerala

Response coordinated through government's Kerala Infrastructure and Technology for Education (KITE) initiative. Jinoy Jose P (2020) documents the state's approach:

Online training

Conducted five - day online training for **81,000** primary school teachers to refresh their digital skills

Avadikala Santhoshangal (Happy Vacation times)

A programme under which online edutainment content was released on state's SAMAGRA resource porta, with its phase I focusing on grade 5 to 9

Akshara Vriksham (Tree of Letters)

A programme that aims to collect, curate and publish creative content such as stories, poems and articles created by the students. SCERT selected the best entries later to be published as a book

KITE's Victers TV

Special programmes are aired on KITE's Victers TV channel delivered through DTH. In addition, KITE also provides a MOOC for flexible training of teachers

* States discussed here are not necessarily representative of the range of education responses of all Indian states and UTs. Case studies are based on information from publicly available sources and discussions with relevant stakeholders. Not to be construed as comprehensive coverage of the state's education response to COVID19.

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