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NO TEACHER, NO CLASS

State of the Education Report for India 2021

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Education 2030

NO TEACHER, NO CLASS

State of the Education Report for India 2021

Published by

UNESCO New Delhi Cluster Office
for Bangladesh, Bhutan, India, Nepal,
the Maldives, and Sri Lanka

1 San Martin Marg, Chanakyapuri
New Delhi 110 021, INDIA
T: +91-11-2611 1873/5 & 2611 1867/9
E: newdelhi@unesco.org
W: https://en.unesco.org/fieldoffice/newdelhi

Authors

- Padma M. Sarangapani
  Professor of Education and Chairperson,
  Centre of Excellence in Teacher Education
  Tata Institute of Social Sciences
- Bindu Thirumalai, Assistant Professor
- Anusha Ramanathan, Assistant Professor
- Ruchi Kumar, Assistant Professor
- Mythili Ramchand, Professor

Research support

- Latha, K
- Arundhati Roy
- Mayuri Kulkarni

Technical support and coordination

- Nicole Bella
  Chief of Education and Senior Education Specialist
- Abhinav Kumar
  Associate Programme Coordinator
  UNESCO New Delhi

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ISBN: **978-81-89218-81-2**

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Graphic design and editing

Firefly Communications, New Delhi

Photos

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Informed consent was obtained from all individuals whose photographs appear in this publication.

The report is available for download at:
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For copies of the report, please contact:
Abhinav Kumar: ab.kumar@unesco.org
Rekha Beri: r.beri@unesco.org

NO TEACHER, NO CLASS

State of the Education Report for India 2021



Message

Director
National Council of Educational
Research and Training (NCERT)

The National Council of Educational Research and Training (NCERT) is very pleased to note that UNESCO has dedicated the theme of its 2021 'State of the Education Report for India' to teachers, teaching and teacher education. With the recent release of the National Education Policy (NEP) 2020 that stresses the key role teachers play, this report is timely, as it will complement NEP's ambitions on the theme of teachers.

The NEP 2020, which was approved by the Union Cabinet of India on 29 July 2020, outlines India's new vision of its education system. It puts forth many policy changes in the sphere of teachers and teacher education, including early childhood education, inclusive education and skill development. We hope that this report will help us move a step closer towards achieving the concrete goals of this new education policy.

The new policy takes a systems approach to teaching quality. The methodology links the status of the profession, the quality of new entrants, quality of initial professional development, career management, and the work environment, which encompasses the physical environment, accountability, and leadership. It also highlights the importance of viewing school education as an extension of early infancy to senior secondary school. Incorporating vocational education, music, art, and physical education, within the mainstream curriculum is also deemed fundamental. We are pleased to see these subjects highlighted and addressed in the report, supported with effective recommendations.

The NCERT under its mandate has been conducting capacity-building programmes since its inception, covering a large clientele including teacher educators, and teachers in all the states and Union Territories. For instance, NCERT has played a critical role in the development of the national programme NISHTHA – an integrated teacher training programme for building the capacity of elementary stage teachers in the entire country with an inbuilt mechanism of mentoring and monitoring. NISHTHA aims to build capacity of 4.2 million teachers and school heads at the elementary level on learner-centred pedagogies to improve learning outcomes of students, develop social-personal qualities, promoting health-, physical-education- and art-integrated learning, and ICT integration across subject areas.

Given the current circumstances, and as education systems across the world recover after the COVID 19 pandemic, we appreciate the particular focus of the report on teachers as it helps bring the attention on the teaching community that has been deeply affected by the pandemic, and remained proactive and optimistic in such testing times.

I compliment UNESCO New Delhi on this publication, which I am hoping will provide a wide range of stakeholders in the education sector with relevant evidence to enhance existing best practices. I trust this report will be an informative guide for programmes directed towards teachers, teaching and teacher education.



Sridhar Srivastava
Director
NCERT



UNESCO Director-General Audrey Azoulay meets with students from Girls Secondary School in Jaipur, Rajasthan, during her 2020 visit to India.

Foreword

> With no teacher, there can be no class.

Sustainable Development Goal 4 and its specific target 4.c has put a spotlight on teachers as key in accomplishing the goal of the Education 2030 Agenda – 'Providing equitable quality education for all'.

In India, the recently released National Education Policy (NEP) 2020 has further reinforced this notion by rightly placing teachers at the centre of the education system.

Our third edition of the State of Education Report for India therefore focuses on teachers and reminds us how important these professionals are. It echoes the NEP, which states that 'Teachers truly shape the future of our children – and, therefore, the future of our nation'.

The country has made extraordinary progress in its education system, but – as in any other country – there always lie opportunities for improvement. Enhancing the quality of education and the learning outcomes of students is naturally considered to be of utmost priority, but equally important is the need to recognize and value teachers, given that they are paramount in this endeavour.

For this to be accomplished, teachers who are professionally qualified and trained, need to be available in larger numbers. The report shows that maintaining a good student-teacher relationship also helps establish a positive learning environment and improve academic success. In other words, having a force of 'quality teachers' in schools promotes experiential learning.

Of course, in times of COVID-19, the education sector has been heavily impacted. The learning experience, particularly that of the most marginalized and vulnerable students, has been compromised. Nevertheless, teachers have shown great resilience and have managed to actively adapt to the situation while teaching their students efficiently. The incessant efforts and dedication shown by teachers during the pandemic therefore made the focus on teachers in this year's State of the Education Report for India even more relevant.

We hope the present publication will serve as a useful reference to inform and enhance the current and future programmes and policies aimed at the overall development of teachers in India. We hope that policymakers, teachers, administrators and donors will consider and hopefully put in action the ten recommendations that the report proposes, whilst carrying out the necessary measures to support the teachers' community.

This report is an opportunity to collectively pay tribute to teachers in India who have nurtured generations of learners over time and under all circumstances. The COVID-19 pandemic has shed light on some of their vulnerabilities, but it has also demonstrated their capacity to innovate and reinvent themselves, positioning themselves as frontline workers.

Yes, teachers can and do make a difference. With no teacher, there can be no class. But teachers need to be duly supported and recognized as the professionals they are.



Eric Falt
Director,
UNESCO New Delhi



Above: A teacher helps a student learn computer code. Ahlcon International School, Delhi, India.

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Acknowledgements

A significant amount of effort has gone into the development of this report. It was only made possible thanks to the support and advice of many individuals and organizations. The UNESCO New Delhi office would like to thank everyone who contributed to this endeavour.

The collaborative effort was guided and managed by Ms Nicole Bella, chief of the Education team at UNESCO New Delhi. Mr Abhinav Kumar, Associate Programme Coordinator, Education team provided invaluable technical support and coordination from the report's inception. They also interacted closely with the research team from the Centre of Excellence in Teacher Education at Tata Institute of Social Sciences (TISS) in Mumbai, led by Dr Padma M. Sarangapani, Professor of Education and Chairperson of the Centre of Excellence in Teacher Education, and supported by Ms Bindu Thirumalai, Assistant Professor; Ms Anusha Ramanathan, Assistant Professor; Ms Ruchi Kumar, Assistant Professor; and Ms Mythili Ramchand, Professor at TISS. Further research support was provided by Ms Latha. K, Ms Arundhati Roy and Ms Mayuri Kulkarni.

The editorial board was guided by Mr Eric Falt, Director and UNESCO Representative, and included Dr Venkata Subbarao Ilapavuluri, Secretary to the Vice President of India; Mr Carlos Vargas Tamez, Chief of Section, Teacher Development at UNESCO; Dr Sridhar Srivastava, Director, NCERT, Ms Noopur, Executive Director, NCE; Ms Manasi Tata, Executive Director and CFO, Managing Trustee and CEO of Caring with Colour, Kirloskar Systems Limited; Professor Pranati Panda, Professor and Head, Department of School Standards and Evaluation, NIEPA; and Ms Kesang Sherpa, Member Secretary, NCTE. The editorial board met three times to provide support and feedback to the research team.

The research team would like to thank Aashu Calapa and Mr Omar Diop, for their keen interest in this report. Ms Mridusmitha Bordoloi guided the PLFS analysis. The staff of Centre of Excellence in Teacher Education, including Mr Munaf Merchant and Mr Vijay Jathore, helped manage all logistics. Mr Sunil Kumar and Mr Ramesh Khade supported in creating tables and figures. Ms Aditi Sehrawat conducted interviews and Ms Archana Mehendale reviewed the report. Mr. Manoj Ahuja of CBSE and his CTET team provided related data.

Special thanks go to Education team colleagues at UNESCO New Delhi for their constant and untiring support. Thanks to Mr Manish Joshi, Ms Sarita Jadav, Ms Huma Masood for their generous advice, suggestions and practical solutions; Mr Girish Joshi, for able and timely management of contracts; and Ms Rekha Beri and Ms Annapurna Surana of the Public Information Unit for anchoring the outreach and communication efforts. UNESCO New Delhi is particularly grateful to Ms Ayesha Sarkar and Mr Anandaroop Ghosh of Firefly Communications, New Delhi, for their creative support and meticulous copy-editing, designing and printing of the report. Many thanks are also due to Mr Tanmay Rawat of Snow Leopard Pictures who managed to capture wonderful photos and videos despite the restrictions imposed by the pandemic.

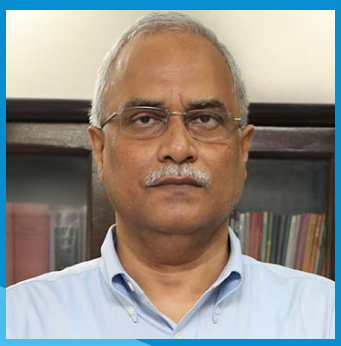
Sincere gratitude goes to the teams at Ahlcon International School, Composite School Hoshiyarpur, Gurukul Vidya Niketan, Rajkiya Intermediate College and RKJ.S.N.S.N.M. Inter College for providing valuable access to their school premises and existing image banks, and for facilitating the photo/video captures.

This publication was made possible through the generous financial contributions from the UNESCO Headquarters Section of Teacher Development as well as Education International (Asia-Pacific Region).












Authors and editorial board members

Top row (from left): Dr. Padma M. Sarangapani, Professor of Education and Chairperson of the Centre of Excellence in Teacher Education, Tata Institute of Social Sciences (TISS) · Ms Anusha Ramanathan, Assistant Professor · Ms Ruchi Kumar, Assistant Professor · Ms Bindu Thirumalai, Assistant Professor

Second row (from left): Ms Mythili Ramchand, Professor, TISS · Dr Venkata Subbarao Ilapavuluri, Secretary to the Vice President of India · Kesang Sherpa, Member Secretary, National Council for Teacher Education (NCTE) · Dr Sridhar Srivastava, Director, National Council of Educational Research and Training (NCERT)

Third row (from left): Professor Pranati Panda, Professor and Head, Department of School Standards and Evaluation, NIEPA · Ms Noopur, Executive Director, National Coalition for Education (NCE) · Ms Manasi Tata, Executive Director and CFO, Managing Trustee and CEO of Caring with Colour, Kirloskar Systems Limited · Mr Carlos Vargas Tamez, Chief of Section, Teacher Development, UNESCO

Fourth row: Mr Eric Falt, Director and UNESCO Representative, New Delhi

Abbreviations and acronyms

AAC	Alternative Academic Calendar
ADEPTS	Advancement of Educational Performance through Teacher Support
AIPTF	All India Primary Teacher Federation
APU	Azim Premji University
ASER	Annual Status of Education Report
B.A.B.Ed.	Bachelor of Arts Education
B.Ed.	Bachelor of Education
B.P.Ed.	Bachelor of Physical Education
B.Sc.B.Ed.	Bachelor of Science Education
B.V.A.Ed.	Bachelor of Visual Arts Education
BIET	Block Institutes of Education and Training
BITE	Block Institutes of Teacher Education
BOOT	Build Own Operate and Transfer
BRC	Block Resource Centre
BRICS	Brazil, Russia, India, China, and South Africa
BYOD	Bring Your Own Device
C.P.Ed	Certificate in Physical Education
CABE	Central Advisory Board Of Education
CBSE	Central Board of Secondary Education
CCE	Continuous and Comprehensive Evaluation
CCK	Curricular Content Knowledge
CEQUE	Centre for Equity and Quality in Universal Education
CETE	Centre of Excellence in Teacher Education
CLIx	Connected Learning Initiative
CoP	Communities of practice
COVID	Corona Virus Disease
CPD	Continuing Professional Development
CRC	Cluster Resource Centre
CSF	Central Square Foundation
CSR	Corporate Social Responsibility
CSSTE	Centrally Sponsored Scheme of Teacher Education
CTE	Colleges of Teacher Education
CTET	Central Teacher Eligibility Test
D.Ed.	Diploma in Education
D.El.Ed.	Diploma in Elementary Education
D.P.Ed.	Diploma in Physical Education
DIET	District Institute of Education and Training
DIKSHA	Digital Infrastructure for Knowledge Sharing
DoSEL	Department of School Education & Literacy
DPEP	District Primary Education Project
DPSE	Diploma in Pre-School Education
ECCE	Early Childhood Care and Education
ECE	Early Childhood Education
EGS	Education Guarantee Scheme
ESL	English as a Second Language
FOSS	Free and Open Source Software
GER	Gross Enrolment Ratio
GTSI	Global Teacher Status Index
IASE	Institutes of Advanced Study in Education
ICT	Information and Communications Technology
IED	Integrated Education
IMA	Instant Messaging Application
INR	Indian Rupee
INSET	In-service Teacher Education
IRDSE	Institute for Research & Development in School Education
IRE	Initiation-Response-Evaluation
ITE	Post-primary Initial Teacher Education
JRM	Joint Review Mission
KGBV	Kasturba Gandhi Balika Vidyalaya
KRP	Key Resource Persons
KVS	Kendriya Vidyalaya Sangathan
M.A.	Master of Arts
M.Ed.	Master of Education
M.P.Ed.	Master in Physical Education
M.S.Ed	Master of Science in Education
MDM	Mid Day Meal
MHRD	Ministry Of Human Resource Development
MNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
MoE	Ministry of Education
MOOC	Massive Open Online Course
MRP	Master Resource Person
NAS	National Achievement Survey
NCERT	National Council of Educational Research and Training
NCF	National Curriculum Framework
NCFTE	National Curriculum Framework for Teacher Education
NCO	National Classification Of Occupation
NCR	National Capital Region
NCTE	National Council for Teacher Education
NEP	National Education Policy
NGO	Non Governmental Organization
NIC	National Industrial Classification Code
NIEPA	National Institute of Educational Planning and Administration
NIOS	National Institute of Open Schooling
NISHTHA	National Initiative for School Heads' and Teachers' Holistic Advancement
NITI AYOG	National Institution for Transforming India



Above: A teacher helps students point out countries on a globe. G.D. Goenka K.K.D, Delhi, India.

NPE	National Policy on Education
NPM	New Public Management
NRG	National Resource Group
NRP	National Resource Person
NSS	National Service Scheme
NVS	Navodaya Vidyalaya Samiti
OBC	Other Backward Class
ODL	Open and Distance Learning
OECD	Organisation for Economic Co-operation and Development
OER	Open Educational Resources
OoSC	Out Of School Children
OU	Open University
OUP	Oxford University Press
PCK	Pedagogical Content Knowledge
PD	Professional Development
PF	Provident Fund
PGCE	Postgraduate Certificate in Education
PGDE	Postgraduate Diploma in Education
PGI	Performance Grading Index
PGT	Postgraduate Teacher
PI	Performance Indicators
PINDICS	Performance Indicators for Elementary School Teachers
PISA	Program for International Student Assessment
PLC	Professional Learning Communities
PLFS	Periodic Labour Force Survey
PMMMNMTT	Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching
POA	Programme of Action
POCSO	Protection of Children from Sexual Offences
PPP	Public Private Partnership
PSSB	Professional Standards Setting Body
PSTE	Pre-Service Teacher Education and Training
PTR	Pupil Teacher Ratio
PU	Pre-university
QR	Quick Response
RCI	Rehabilitation Council of India
RMSA	Rashtriya Madhyamik Shiksha Abhiyan
RPWD	The Rights of Persons with Disabilities
RTE	Right to Education
RTICT	Reflective Teaching with Information and Communication Technology
SC	Scheduled Castes
SCERT	State Council of Educational Research and Training
SD	Standard Deviation
SDG	Sustainable Development Goals
SEQI	School Education Quality Index
SIEMAT	The State Institute of Educational Management and Training
SPIRALS	Supporting & Promoting Indigenous & Rural Adolescents' Learning of Science
SRGs	State Resource Group
SSA	Sarva Shiksha Abhiyan
ST	Scheduled Tribes
TE	Teacher Education
TEAB	Teacher Education Approval Board
TEI	Teacher Educational Institute
TESS India	Teacher Education through School-based Support in India
TET	Teacher Eligibility Test
TGT	Trained Graduate Teachers
TISS	Tata Institute of Social Sciences
AUD	Ambedkar University Delhi
TLM	Teaching Learning Resources and Materials
TSAR	Teacher's Self-assessment Rubrics
TV	Television
UDISE	Unified District Information System for Education
UK	United Kingdom
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations International Children's Emergency Fund
UP	Uttar Pradesh
USA	United States of America
UT	Union Territory

Executive summary

Over the last two hundred years, the understanding and practices of teaching and teacher education have undergone paradigmatic shifts – from being perceived as a vocation and craft, to a profession with specialized knowledge, prolonged preparation and professional ethics.

India's Right to Education Act 2009 lays down norms and standards for teachers, teaching, and teacher-related governance. The National Education Policy 2020 recognizes how central teachers are to the realization of its goals, and calls for improving working conditions and overhauling teacher education. There is increasing urgency to improve quality, accountability and governance within the sector.

The ongoing COVID-19 pandemic has further highlighted the role played by teachers and quality teaching in ensuring meaningful education and resilient education systems.

About the report

This report attempts to provide an understanding of key aspects of the teaching profession and workforce in India – nearly 9.7 million teachers in 2019/20 – the complex work that they do, and their professional development, through the filters of policy debates, choices, pushes and pulls. It looks at the questions that create core tensions in the sector and affect teacher quality and availability. It presents evidence wherever possible, and identifies gaps.

The analytical framework of this report draws from important contextual and sectoral aspects including India's social and political context — especially its federal structure – and social characteristics of gender, caste, rural-urban divide and the government-private divide.

This report, prepared during the ongoing COVID-19 pandemic, and constrained by prevailing conditions, is primarily based on analysis of secondary data and review of policies, reports and research literature. Chapters explore specific themes and present key findings.

Women account for about 50 per cent of the teaching workforce, but there are significant inter-state and urban-rural variations

Key findings

PROFILE OF TEACHERS IN INDIA

Using data from the Unified District Information System for Education, the report profiles the current teaching workforce and reveals aspects of teacher availability, deployment, and working conditions.

The private, unaided sector accounts for 30 per cent of the teaching workforce, while the government sector employs about 50 per cent. While teacher availability has improved, pupil-teacher ratios are adverse in secondary schools. Moreover, there is no information on availability of special education, music, arts and physical education teachers. The availability and deployment of subject teachers too, is not well documented and monitored. Almost all single-teacher schools are in rural areas. There is a pronounced need to improve both availability and deployment of qualified teachers in the north-eastern states of India. In terms of basic amenities, the working conditions of teachers in the north-east and the 'aspirational districts' are poor. Provision of school libraries is low, information and communications technology (ICT) infrastructure is very low, and there is marked rural-urban disparity.

The profession is overall gender balanced, with women accounting for about 50 per cent of the teaching workforce, but there are significant inter-state and urban-rural variations.

The majority of teachers in urban areas are women, in contrast with rural areas. The early childhood education, special education and private unaided schools sectors are also highly feminized.

The work force has a deficit of over 1 million teachers (at current student strength) and the need is likely to grow, given the shortages of teachers in certain education levels and subjects such as early childhood education, special education, physical education, music, arts, and curricular streams of vocational education. In fifteen years, about 30 per cent of the current workforce will need to be replaced.

STATUS AND TERMS OF EMPLOYMENT

The teaching profession has average status in India, but it is a career of choice for women and youth from rural areas in particular. Private school teachers and early childhood education teachers are highly vulnerable groups, with many working without contracts at low salaries, with no health or maternity leave benefits.

Several states have introduced the teacher eligibility test as part of their recruitment processes in order to improve teacher quality. Some states have also adopted technology-aided teacher deployment. Teacher governance remains a focal area for systemic reform, accounting for 70 per cent of the governance metric score in the Performance Grading Index.

TEACHING PRACTICES IN INDIA

Teacher-centric practices dominate the Indian pedagogical landscape in both government and private schools, and in most subject areas. These practices are linked to teachers' beliefs regarding their learners, the process of learning, subject matter and the aims of education. Teachers who successfully address the learning needs of children from underprivileged and marginalized groups are found to have positive attitudes towards their students. They think of pedagogy as inclusive communication, and create an environment in which children feel cared for. Perceptions of ineducability, on the other hand, lead to teachers neglecting their students. Having an academic and collegial ethos in school, and better teaching-learning environments motivate teachers and enhance teaching quality. Teachers are more likely to change their practices in sustained ways when professional development engages with their beliefs and they experience the satisfaction of seeing their students learn.

Teacher workload is high – contrary to public perception – although invisible, and a source of stress. Teachers value being given professional autonomy, and disregard of this is demotivating. Teachers' voices in the system in matters of policy and governance can be enhanced through professional teacher networks, and unions. Most accountability systems tend to emphasize monitoring. Professional standards need to be made a part of a larger system and used in the context of professional development rather than accountability.

PRE- AND IN-SERVICE PROFESSIONAL TRAINING

A large proportion of teacher education programmes in India are run in 'self-financed' colleges. Their geographic spread across the country is uneven. There are very few programmes to prepare special education, vocational education, arts and music education teachers. The volume of admission in Bachelor of Education (B.Ed.) programmes seems to be stable, and quality of intake is found to have improved due to the adoption of entrance examinations. However, in some states, there are fewer science students opting for programmes. Admissions in Diploma in Elementary Education (D.El.Ed.) and Master of Education (M.Ed.) programmes are shrinking. Pre-service teacher education curricula still need to be improved, and supported with Indian-language teaching-learning resources. While in-service teacher education is widespread and now incorporates technology, research is needed to understand its impact and to identify which models work.

TEACHERS AND ICT

Finally, the report looks at teachers' experience of ICT and the effect of the COVID-19 pandemic on the teaching profession. Most teachers are found to have positive attitudes and beliefs about integrating technology in education. However they feel that it is time-consuming, and that they lack professional skills. Teachers have largely used smartphones as their primary EdTech tool during the COVID-19 pandemic. However, a large proportion of students have had limited or no access to devices and data, compelling teachers to use hybrid modalities to keep in touch. Professional development using tech platforms can offer possibilities for building communities and new professional learning pathways by enabling greater agency and interaction among teachers. However, the COVID-19 pandemic has also exposed the vulnerability and insecurity of teachers.



The way forward

RECOMMENDATION 1

Improve the terms of employment of teachers in both public and private schools.

RECOMMENDATION 2

Increase the number of teachers and improve working conditions in north-eastern states, rural areas and 'aspirational districts'.

RECOMMENDATION 3

Recognize teachers as frontline workers.

RECOMMENDATION 4

Increase the number of physical education, music, art, vocational education, early childhood and special education teachers.



Above: A teacher leads students through a physical education class. Gurukul Vidya Niketan, Uttarakhand, India.

RECOMMENDATION 5

Value the professional autonomy of teachers.

RECOMMENDATION 6

Build teachers' career pathways.

RECOMMENDATION 7

Restructure pre-service professional development and strengthen curricular and pedagogical reform.

RECOMMENDATION 8

Support communities of practice.

RECOMMENDATION 9

Provide teachers with meaningful ICT training.

RECOMMENDATION 10

Develop teaching governance through consultative processes, based on mutual accountability.

About the report

Teachers are professionals and the work of teaching is complex. This report presents key features and dimensions that help in understanding the profession's critical aspects, the work of teachers and their professional development, through the lenses of policy debates, choices, pushes and pulls. As indicated in the sections that follow, there are several conundrums that create core tensions in the sector. This report looks for and presents evidence wherever possible, and identifies gaps.

Scope and framework

The framework of this analysis draws on dimensions that have important sectoral and contextual relevance for the teaching profession, the work of teaching, teachers as professionals and workers, and the practice of teacher education. Some of these are outlined here.

Social and political context

Rural versus urban, gender, caste, class, and variations between regions and states are important analytical lenses in the Indian development context.

Below: A teacher takes an extra class for some students. RKJ.S.N.S.N.M. Inter College, Uttarakhand, India.





Above: Boys and girls interact with their teacher outside class. Rajkiya Intermediate College, Uttarakhand, India.

The role of the market and comparisons between state and private are growing in importance, given the high percentage share of private schools in student enrolment and teacher employment.

Comparisons and variations between states are important given that India is federal in its structure. According to Mehendale and Mukhopadhyay (2020), 'The political and administrative structures of the education system in India is based on the principles of federalism and decentralization'. Education has been on the concurrent list since 1972. Matters related to teachers are largely decided by state governments and teachers employed in a state government school are employees of that state. However, over the last two decades, the central government's influence has grown in matters of school education and teachers' work and professional development, through several missions, centrally sponsored schemes, and regulatory norms enabled by the Right to Education (RTE) Act.

Socio-historical and cultural status

The report's analysis also draws from educational, historical, sociological and political-economic perspectives that inform the understanding of the teaching profession and the work of teaching, both internationally as well as in the context of India and the developing world. Teaching is a form of social action and inquiry, and has evolved over the last two hundred years. Understanding of and practices related to teaching and teacher education have undergone paradigmatic shifts, from its conception as a vocation and craft, to the idea of a profession with specialized knowledge, prolonged preparation and professional ethics (Jha et al., 2021; Ramchand, 2021; Kumar, 2014; Sarangapani et al., 2018; Sarangapani, Sayed and Sarangapani, 2021; Sarangapani et al forthcoming).

UNESCO guidelines

The report also explores where India stands on the nine dimensions discussed in the UNESCO guidelines for teacher policy (UNESCO, 2015), namely:

1. Recruitment and retention
2. Teacher education (initial and continuing professional development)
3. Deployment
4. Career structure and paths
5. Employment and working conditions
6. Reward and remunerations
7. Standards
8. Governance
9. Accountability

Methodology

The report was developed based on analysis of secondary data and review of literature, specifically the following.

Policy documents and reports, and literature reviews of research reports and research publications. Government websites were also accessed and studied. Case studies were drawn from existing literature.

Two data sets – Unified District Information System for Education (UDISE+) 2018/19 round and the Periodic Labour Force Survey[1] 2018/19 – were accessed and analysed.

To understand issues in teacher education, the authors of this paper analysed a primary research on Central Teacher Eligibility Test (CTET) question papers from July 2019, conducted by the Central Board of Secondary Education (CBSE). A primary survey was also conducted with sixty-three teacher educators from eight states, using a semi-structured interview schedule.

The unabated COVID-19 pandemic restricted movement and access, and limited all interactions – both within the research team and in the field – to online and telephonic media.

A selection of key stakeholder interviews that had been planned could not be completed, and case studies could not be taken up. It was also decided that the dimensions of instruction and academic leadership/supervision in schools would not be included in the report.

[1] The Periodic Labour Force Survey 2018/19 conducted by the National Statistical Office, Government of India surveyed 101,579 households and covered 420,757 individuals. http://mospi.nic.in/unit-level-data-periodic-labour-force-survey-plfs-july-2018-june-2019 (accessed September 30, 2021).



Structure of the report

The report is organized into seven chapters devoted to specific themes including a concluding chapter of recommendations.

CHAPTER 1 is the introductory section that sets the context of the report.

CHAPTER 2 provides a profile of teachers in India, drawing mainly from Unified District Information System for Education (UDISE) data, and reveals aspects of teacher availability and deployment, and their working conditions.

CHAPTER 3 focuses on the management of teachers and their terms of employment and work. It examines recruitment, contracts, remuneration and benefits, career pathways and rewards, workload, stress and job satisfaction, and accountability.

CHAPTER 4 examines teaching quality, and presents the dominant landscape – teaching practices, specifically those that make a difference, teaching-related beliefs of teachers, and pedagogy reform – based on research and the teachers' own voices.

CHAPTER 5 examines pre- and in-service professional development of teachers and teacher support.

CHAPTER 6 focuses on teachers and information and communications technology, and then looks at the effect of the COVID-19 pandemic on teaching and the profession.

CHAPTER 7 offers ten recommendations.

Below: Students enjoy a physical education class. Rajkiya Intermediate College, Uttarakhand, India.





A young teacher reads out an English language lesson to her students. RKJ.S.N.S.N.M. Inter College, Uttarakhand, India.



CHAPTER 1

Introduction

The theme of teachers, teaching and teacher education is important in the current phase of Indian school education where the access milestone has been crossed and the system needs to deliver inclusive, quality education for all. The recent National Education Policy (NEP) 2020 and the COVID-19 pandemic form the context of this report.

1 Introduction

India's primary and secondary school teaching workforce, enumerated as nearly 9.7 million in the recently published Unified District Information System for Education (UDISE+) report of 2019/20,[2] is among the largest in the world. The system has 1.5 million schools and 248 million students enrolled from Grade 1 to Grade 12. About 69 per cent of the schools are run by various state governments and employ about 51 per cent of teachers. 22 per cent of schools are privately managed and funded primarily through student fee (in other words, private unaided schools) and employ 37 per cent of teachers (see Table 1.1)[3]. 84 per cent schools are located in rural areas. 54 per cent of all schools are primary schools, catering to Grade 1 to Grade 5.[4]

The Right of Children to Free and Compulsory Education Act (Government of India, 2009) – popularly referred to as the Right to Education (RTE) Act – is a facet of the right to life guaranteed by Article 21 of the Constitution of India and is intended to enable all children to live with dignity. The act operationalizes the constitutional guarantee into eight years of compulsory education for all children aged between six and fourteen years. With considerable gains in access to school, the country has now entered the quality phase of universal elementary education. This has brought systemic focus on teachers and teaching.



[2] Data used in this chapter draws from UDISE+ 2018/19 and also the recently released UDISE+ 2019/20 data. As most of the analysis was already completed based on UDISE+ 2018/19, we have retained those figures and report 2019/20 data for the macro level picture. The relevant UDISE+ round is indicated in sources where cited.

[3] There is considerable variety in between – including schools that are privately managed and receive government aid, and various quasi-government societies running schools across India including the Kendriya Vidyalaya, the Jawahar Navodaya Vidyalaya and societies under various ministries including the atomic energy department, railways, tribal welfare, etc. While UDISE has begun enumerating enrolment in pre-school, This data has not been examined and analysed.

[4] Based on data from UDISE+ 2018/19



Above: An early childhood education teacher assists a student with writing and drawing shapes. Gurukul Vidya Niketan, Uttarakhand, India.

Opposite page: Students participate in active learning at a Sanskrit language class. Composite School, Hoshiyarpur, Uttar Pradesh, India.

Teachers make a difference

Quality of teaching, teachers, and teachers' education are central to delivering quality education for all. They enable education to achieve its transformative potential for individuals, communities and for overall national development.

'Pedagogy is inter-relational; it is carried out by the teacher and is constitutive of the child's epistemic, social and political being … The core of education quality is the quality of the overall pedagogic effort made by the teacher, the school, the family and the state, and particularly, of the teacher's work' (Sarangapani et al., 2018). The process of education is more than a process of acquiring knowledge and skills; and even the acquisition of knowledge and skills – constructing knowledge; understanding its significance and value; being able to use, create and learn new things; and the emergence of the self as a knower – requires the context created by the teacher, explicitly or implicitly, and the attention she or he brings to the learner, to what is being learnt and to the context (Masschelein and Simon, 2013). Particularly, where children of the poor are concerned, pedagogic effort can enable children to have aspirations, to acquire the capabilities (dispositions, knowledge, skills) and access the social capital needed to achieve these aspirations (Carnoy, Gove, and Marshall, 2007). It is through this that education, as a fundamental human right, becomes a means of personal and social transformation.[5]

Arguably, India is at a phase where teachers, teaching and the system will need to engage with contextual characteristics of schools and learners in order to realize the vision and promise of the RTE Act. Equity and quality are both concerns. While the gross enrolment ratio (GER) for elementary schools has increased from 81.6 in 2001 to 93.03 in 2018/19 and stands at 102.1 in 2019/20,[5] overall retention is 74.6 per cent for elementary education and 59.6 per cent for secondary education in 2019/20.[6] Successive rounds from the National Assessment Surveys show that student learning outcomes are below their grade level, and that the proportion of children achieving grade-appropriate learning reduces as they move to higher grades (see Figure 1.1).

Student learning outcomes are below their grade level, and the proportion of children achieving grade-appropriate learning reduces as they move to higher grades

[5] Sarangapani et al. (2018)

[6] UDISE school report cards retrieved from http://14.139.60.149/ReporterModule/ReportModule/Startup/Startup.aspx (accessed 30 September 2021).

TABLE 1.1

Proportion of schools, students, teachers in schools, by management, in school year 2018/19
(inclusive of all levels from Grade 1 to Grade 12)

Management type	Schools		Students		Teachers	
Government*	67%	1,032,018	49%	122,583,743	50%	4,744,570
Private unaided	21%	326,228	34%	84,122,799	35%	3,304,373
Private (receiving government aid)	5%	84,623	11%	27,530,022	9%	819,847
Quasi government**	3%	51,729	2.47%	6,132,624	2%	203,038
Madrasa	2%	24,036	1%	3,616,668	2%	115,560
Unrecognized	2%	32,366	2%	4,352,726	3%	243,451
Total		**1,551,000**		**248,338,582**		**9,430,839**

Source: CETE research team, based on data from UDISE+ 2018/19.

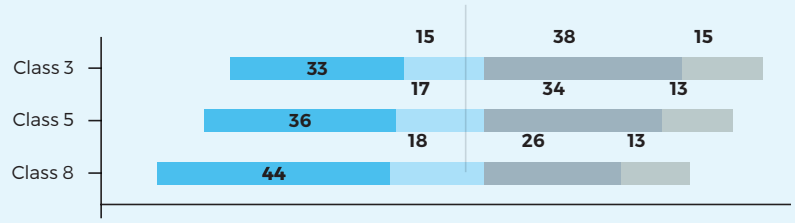
* 'Government' includes schools run by the Department of Education/Public Instruction and local bodies

** 'Quasi-government' includes schools run by Kendriya Vidyalaya, Navodaya Vidyalaya, Ashram Shala and similar societies of public sector undertakings.

Moreover, between 13 per cent and 15 per cent of children overall achieve problem-solving and analytical skills, and higher order conceptual understanding (NCERT, 2020). This reflects the dominance and pervasiveness of pedagogies that are oriented to rote and memorization to pass examinations, not only within the government schooling system catering to children from lower socio-economic groups, or in rural areas, but also in schools which cater to children of the lower and upper middle classes (Sarangapani, 2018). Quality of education is the core challenge of the next decade, when it comes to improving overall educational standards, retention, transition, and equity in academic achievement. Hence the focus of this decade on teachers and teaching.

FIGURE 1.1

Grade-wise proficiency levels as measured in National Assessment Survey 2017



Below basic: Learners at this level have not achieved sufficient knowledge and skills to be considered minimally successful regarding curriculum demand

Basic: Learners can solve problems using simple logic, follow simple instructions and apply simple rules

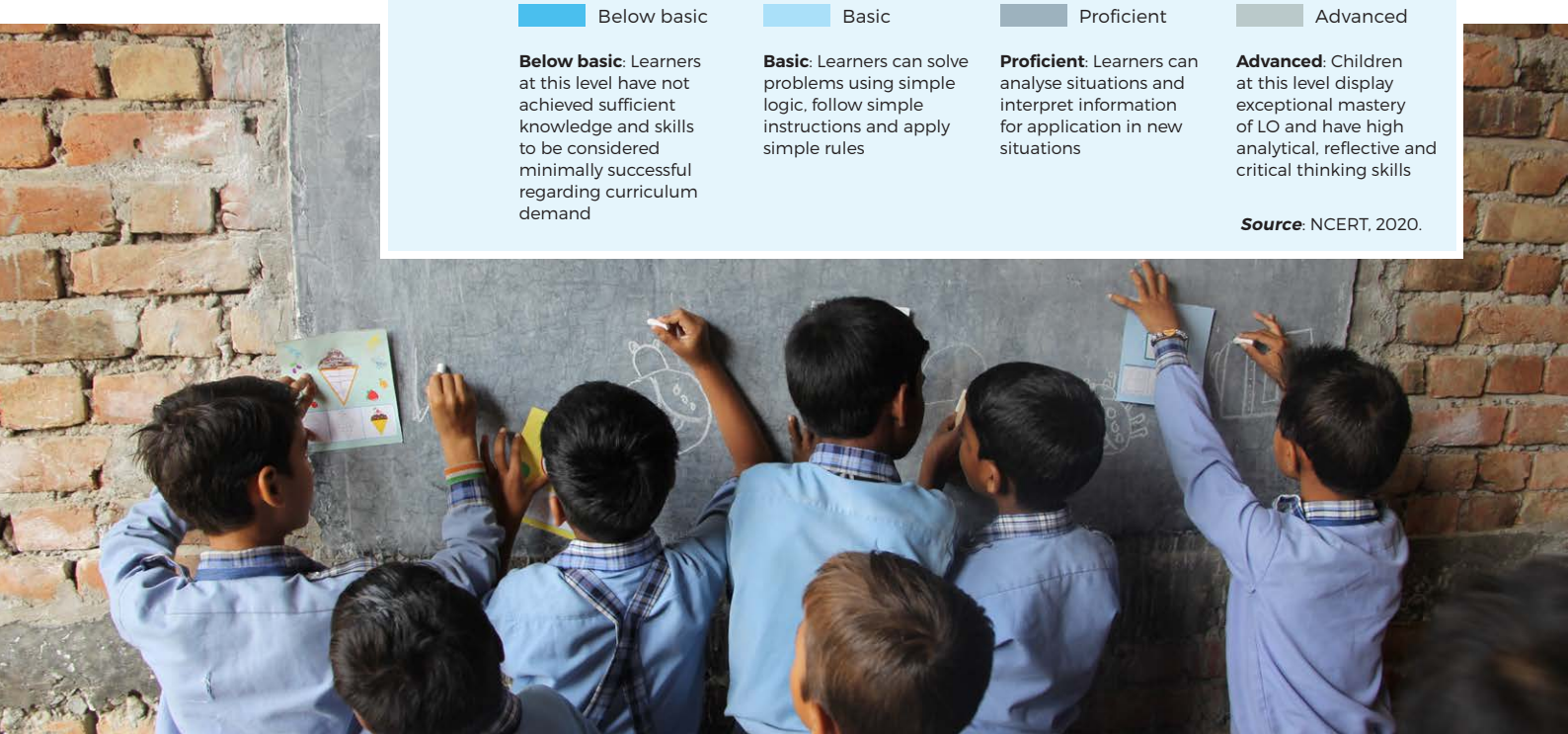
Proficient: Learners can analyse situations and interpret information for application in new situations

Advanced: Children at this level display exceptional mastery of LO and have high analytical, reflective and critical thinking skills

Source: NCERT, 2020.

Opposite page: A teacher conducts and oversees a word-building exercise for young school children at Caring with Color, Bangalore, India.

Below: Students participate in a fun art session at a government school in rural India.





Teachers, teaching and SDG 4

The United Nations' Sustainable Development Goal (SDG) 4.c draws attention to the importance of having and investing in professionally qualified teachers to achieve the goals of equitable, inclusive education and lifelong learning opportunities for all – ensuring that all children acquire the knowledge and skills needed for a sustainable and culturally enriched life. Teachers, through their knowledge, beliefs, attitudes and practices, are key agents who directly contribute to achieving five of the seven SDG 4 targets (4.1, 4.2, 4.4, 4.5, 4.7) and Target 4a (See Box 1.1).

BOX 1.1

Sustainable Development Goal for Quality Education (SDG 4)

4 QUALITY EDUCATION

GOAL 04

ENSURE INCLUSIVE AND EQUITABLE QUALITY EDUCATION AND PROMOTE LIFE-LONG LEARNING OPPORTUNITIES FOR ALL.

Education 2030

4.1 By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes

4.2 By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education

4.3 By 2030, ensure equal access for all women and men to affordable quality technical, vocational and tertiary education, including university

4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship

4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples, and children in vulnerable situations

4.6 By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy

4.7 By 2030, ensure all learners acquire knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and of culture's contribution to sustainable development

4a Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all

4b By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programmes, in developed countries and other developing countries

4c By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and Small Island Developing States.

Source: https://indicators.report/targets/ (accessed 9 August 2021).

The context

Below: A physical education teacher demonstrates the ankle-hold technique, a *Kabaddi* defence tactic. RKJ.S.N.S.N.M. Inter College, Uttarakhand, India.

Opposite page: New reforms in the Indian education system: The National Education Policy 2020, India.

The analytical framework used in this report draws on important contextual and sectoral aspects including India's social and political context. As a profession, teaching is closely linked to the state, more so under the constitutionally mandated compulsory schooling system. In some national systems, teachers are considered civil servants rather than professionals. In India, government teachers are 'non-gazetted officers'.[7] Hence the importance of policy considerations.

The policy context

The aims of education, norms and expectations for teaching, teachers and teacher education are articulated in or derived from key recent national policies and programmes.

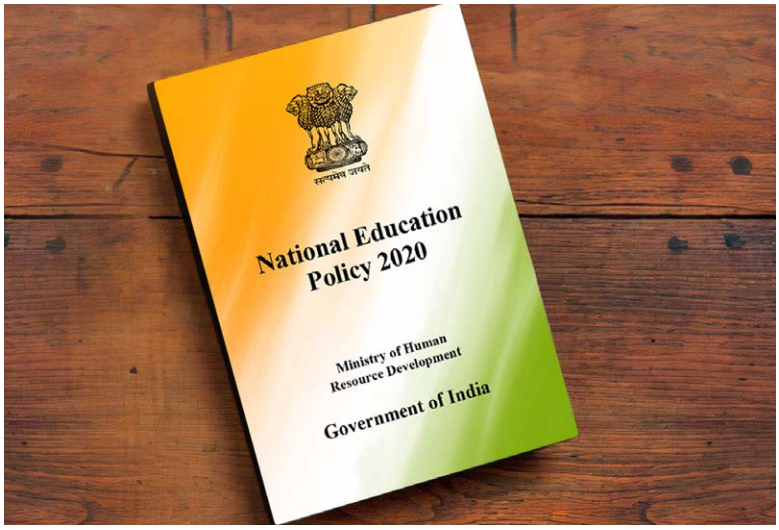
These include the Justice Verma Commission report (2012), the Right to Education Act 2009 along with the National Curriculum Framework 2005 and the National Council of Teacher Education (NCTE) guidelines on teacher eligibility, the National Curriculum Framework for Teacher Education (NCFTE) 2009, the revised Centrally Sponsored Scheme on Teacher Education (CSSTE) 2012 recently merged into Samagra Shiksha, and lastly the National Education Policy 2020. A high level summary of these national policies, frameworks and programmes are presented in Table 1.2.

THE NEP 2020

India announced the new National Education Policy (NEP 2020) on July 29 2020. This document, over five years in the making, is ambitious in its scope, and calls for significant transformations in all sectors of education. The NEP 2020 proposes several changes to be made in the current system aimed at ensuring the provision of quality teachers and quality teaching in order to secure quality education for all. Specifically with reference to teaching, the NEP acknowledges teachers as the heart of the learning process, and stresses the importance of their recruitment, continuing professional development, work environment and service conditions.

[7] Non-gazetted officers do not have the personal authority to issue an official stamp on behalf of the Government. Gazetted posts are usually administrative roles.





The policy takes a systems view of teaching quality, linking it to the status of the profession, the quality of those entering into it, quality of initial professional development, career management and work-place environment including the physical environment, accountability and leadership. It also emphasizes the need to view school education as extended from early childhood years until the senior secondary grade, as well as comprehensively including areas such as vocational education, music, art and physical education into the mainstream curriculum (see Box 1.2). This is a considerably expanded ambition and ambit for school education and consequently for teacher availability, deployment, professional training and teaching. The NEP 2020 presents an opportunity to address teacher and teacher education issues in the country.

BOX 1.2

Key recommendations of the NEP 2020

Key recommendations of the NEP 2020 directly relevant to this report:

1. **Restructure school curriculum and pedagogy** into 5 years foundational stage (for 3- to 8-year-olds) + 3 years preparatory stage (for 8- to 11-year-olds)+ 3 years middle stage (for 11- to 14-year-olds) + 4 years secondary stage (for 14- to 18-year-olds) with implications for teacher preparation, deployment and pedagogy (NEP: 4.1).
2. Replace the two-year bachelor of education (B.Ed.) programme as the dominant criterion with **four-year bachelor of arts education (B.A.B.Ed,) or bachelor of science education (B.Sc.B.Ed.) programmes** providing different pathways to prepare teachers for different stages of school (foundational [including Early Childhood Care and Education or ECCE], primary, middle and secondary) and subject areas (including art and physical education). Strengthen the **curriculum of** Post-primary Initial Teacher Education (**ITE**) to enhance greater understanding and ability for foundational learning, (NEP: 5.23).
3. **Improve working conditions of teachers** and involve them in school governance, recognize their autonomy in pedagogical matters, ensure non-teaching work is eliminated, incentivize teachers and support them when working in rural areas with provision of housing, etc. (NEP: 5.1, 5.2).
4. **Create a needs- and interest-based system of continuous professional development for teachers** with up to fifty hours of professional development provided every year (NEP: 5.5).
5. Create and institute **professional standards which will govern the profession** and be linked to accountability, monitoring, professional development, career pathways within each stage, and vertical mobility within government structures and institutions (NEP: 5.20).
6. **Improve teacher availability, supervision and management** by linking schools into a 'school complex', enabling recruitment and teacher resource optimization at the school complex level, along with transfer policy, filling of vacancies and ensuring availability of subject teachers (NEP: 5.4).
7. **Strengthen quality** by improving the teacher eligibility test, which will be required even for private school employment, and attracting larger numbers of rural students with knowledge of local languages into the system with more scholarships (NEP: 5.4).
8. **Strengthen regulation and oversight of teacher education** colleges so that substandard programmes are eliminated and all teacher education takes place in multidisciplinary environments and composite institutions. Place **teacher education within higher education**, and integrate teacher education regulations into a 'light but tight' regulation within higher education (NEP: 9.3).
9. **Raise status of the profession** to attract talent and cultivate excellence.(NEP 5.1).

In general, the NEP 2020 notes the need for:

- extensive use of technology to improve teaching, learning, educational planning and management (NEP: 4.12, 22.14, 23.3, 26.4)
- a light but tight regulatory framework to ensure integrity, transparency and effective resource management, and to encourage efficiency of the educational system, innovation and out-of-the-box ideas (NEP: 8.1, 18.10)
- Research for the sector (NEP: 15.4)
- Continuous review of progress based on sustained research and assessment (NEP: 4.41)

Source: NEP 2020.

TABLE 1.2

Key policies and programmes shaping the sector

NATIONAL POLICIES

Diagnoses	Recommendations	Practices and impact
National Education Policy 2020		
Policy implementation in the country has hitherto emphasized issues of access, equity and neglected quality. Inadequate focus on outcomes is a key issue in the context of the poor quality of teachers and teaching. Status of teachers is low and hence the profession does not attract talent. Regulation has not worked.	• Make the four-year integrated programme with specialization pathways the mainstay of teacher education (TE) preparation. Retain the two-year Bachelor of Education (B.Ed.) programme, and develop new pathways, including shorter programmes and use of open and distance learning (ODL) for older, more qualified applicants. • Close substandard and dysfunctional teacher education institutes by 2025. • Offer scholarships to 'attract outstanding candidates' to teacher education programmes. • Hold a common entrance examination conducted by the National Testing Agency. • Open up faculty of education positions to scholars and practitioners with relevant experience. • Require all Ph.D. students to take a course on education. • Offer opportunities for continuous professional development to education faculty members, including 'standardized training' programmes using existing technology platforms. • Establish standards for teachers and teaching. • Integrate teacher educator regulation into higher education with the National Council for Teacher Education (NCTE) acting as a standards-setting body. • Establish a National Mission for Mentoring.	Digital Infrastructure for Knowledge Sharing (DIKSHA) portal was developed and launched.
High-powered Commission on Teacher Education 2012 (Justice Verma Commission)		
The current crisis in teacher education is a result of the statutory body's failure in preventing the proliferation of substandard, standalone, self-financed teacher education institutes.	• Enhance quality in curriculum content by integrating knowledge of learners, subject, and context with the larger aims and purposes of education. • Make qualitative changes in the mode of transaction of teacher education programmes. • Increase duration of the one-year pre-service (B.Ed.) programme to two years. Increase duration of one-year M.Ed. programme to two years to enable specialization. Open up entry-level qualification criteria to include students with non-B.Ed. backgrounds, thus enabling a wider pool of talent to enter the profession. • Improve quality of teacher assessment. • Augment institutional capacity, including greater state involvement in provisioning for initial teacher education. • Restructure initial teacher education as four-year integrated programmes offered in universities and multi-disciplinary institutes. • Restrict use of ODL to ongoing professional development only, and remove completely from pre-service teacher education and training (PSTE).	• National Curriculum Framework for Teacher Education was developed, incorporating recommendations on content. • B.Ed. and M.Ed. were changed to two-year programmes. • A model curriculum for four-year programme and regulations were developed. • NCTE Rules and Regulations 2014 included composite institutions for TE. • NEP 2020 integrated key recommendations, but recommended developing use of ODL in PSTE.

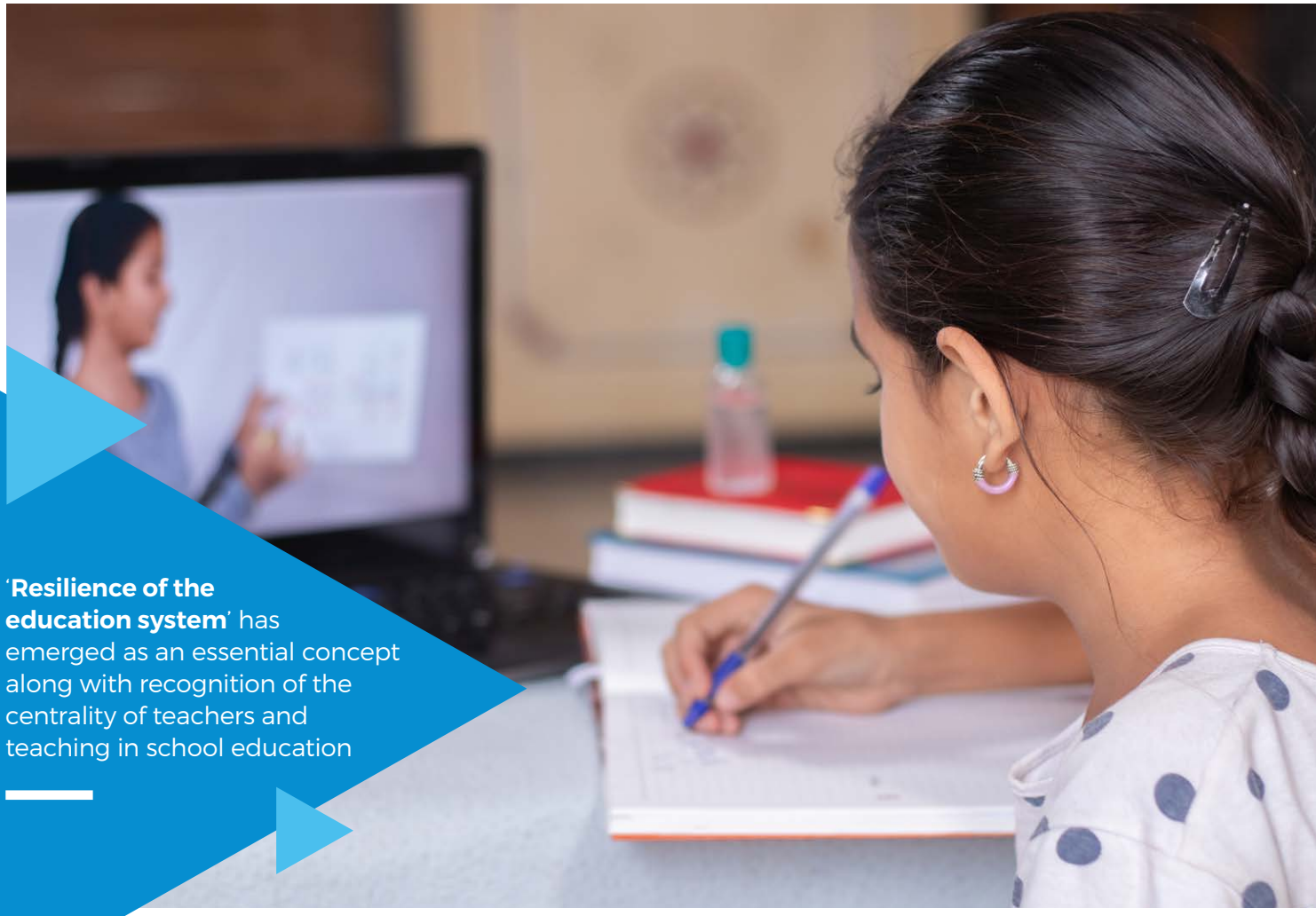
Diagnoses	Recommendations	Practices and impact
The Right to Education Act 2009		
Every child has the right to free and compulsory 'quality' education.	• Initial teacher education to be mandatory for teachers (in other words, teachers must be professionally qualified). • Hold central and state eligibility tests for teacher appointment. • The act defined pupil-teacher ratios (PTR), teacher deployment and provisioning of subject teachers. • The act defined duties of teachers, including maintaining regularity and punctuality in attending school, completing curricula on time and as per the principles laid out, assessing the learning abilities of children and providing additional instructions, holding parent meetings and any other duties prescribed under state rules.	• NCTE appointed the designated authority to define teacher qualifications. • Teacher eligibility test (TET) and the central teacher eligibility test (CTET) were designed and incorporated as mandatory requirements for teacher recruitment in government schools. However, research shows that TET and CTET are oriented more to subject testing and do not test teaching practice. • Untrained teachers were mandatorily trained in a time-bound manner. • However, studies show that quality of such training in many parts was not regulated adequately (NCTE 2014). 15 per cent of teachers in government schools and about 30 per cent of teachers in private unaided schools remained unqualified.
Rules and regulations for recognition of TE programmes (NCTE, 2014–2019) and **The National Curriculum Framework for Teacher Education 2009**		
Enabling qualitative improvement of teacher education programmes aligned to the ambitious school curriculum reform efforts launched in 2005, focusing on equitable learning opportunities.	• Humane and reflective teachers who have the required knowledge, abilities and values to create inclusive learning environments. • Process-oriented, holistic approach to teacher preparation that should be university-based, with a minimum of four years' duration. • A compulsory internship programme of twenty weeks. • Need-based and diversified programmes for continuous professional development of teachers and educators. • Change profile of the envisioned teacher. • Establish teacher-learning centres at every teacher education institute, and academic networking among all education functionaries.	• NCTE rules and regulations were altered to include mentions of curriculum and pedagogy. • NCTE Rules and Regulations 2014 included composite institutional sites for TE programmes. • Curricular components of TE were integrated and endorsed in the Justice Verma Commission report.
The National Policy on Education 1986		
Policy formulations were not accompanied by guidelines for implementation, assigning of responsibilities and financial and organizational support. This has led to problems of 'massive proportions' relating to quantity, quality and equity (Government of India, 1986: 3). Decentralization is required in order to reach teachers.	• Reiterated the first education commission's recommendation of improving pay and service conditions of teachers to 'attract talent to the profession' (pp. 31). • Recommended setting up of sub-district support structures for teachers and local-level provisioning of teacher education. • Recommended a centrally sponsored scheme of teacher education to strengthen TE across states – from the State Councils of Educational Research and Training (SCERTs) to the district level institutes (DIETs). • Recommended setting up NCTE as a statutory body. • Recommended evaluation of teachers, greater teacher accountability, developing a code of ethics for teachers and performance appraisal of institutions.	• The Centrally Sponsored Scheme of Teacher Education (CSSTE) was launched in the 7th Plan, leading to establishment of DIETS in all districts. SCERTs were strengthened, and created if not already established. • University departments of education were strengthened for involvement in in-service education for teachers (INSET) for secondary teachers, Institutes of Advanced Study in Education (IASEs), and research. • Twenty-one day in-service training for teachers provisioned and funding set aside for research and practitioner research/action research. • NCTE was made statutory. • Virtually all distance-learning programmes were derecognized by NCTE. • Provision of non-formal education opened gateway for para teacher appointments on contractual basis, leading to lower salaries and qualifications.

The National Commission on Teachers 1985, was superseded by the NPE 1986. Most of its recommendations regarding improving quality of pre-service teacher education were not picked up, and later found echo in the recommendations of the Justice Verma Commission.

NATIONAL PROGRAMMES AND CENTRALLY SPONSORED SCHEMES

Objectives	Provisions	Impact/effects
Samagra Shiksha (Integration of Sarva Shiksha Abhiyan [SSA], Rashtriya Madhyamik Shiksha Abhiyan [RMSA] and CSSTE, since 2018)		
An integrated scheme of school and teacher education to ensure improved learning outcomes for every child. Shift from an input-based to an outcome-based intervention.	• Intensive programmes to sensitize and build capacity of regular teachers and resource teachers to meet the learning needs of all teachers. • SCERT to become the state-level nodal agency for conducting and monitoring all teacher education programmes, making them need-based and dynamic. District, block and cluster level structures to be strengthened to ensure safety and security of children with special needs, and to meet their learning needs.	No evaluation as yet.
Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (2015–2020)		
A coordinated approach to holistically address the various shortcomings across the spectrum related to teachers and teaching, and improve standards through orientation, content upgrades and the use of information and communications technology (ICT).	• Programmatic and scheme-based interventions, including pre-service and in-service training through existing and new institutional structures, new academic programmes and courses, strengthening postgraduate and doctoral programmes, pre-scheduling year-long training calendars and online training. • Project based activities, including ICT-based training, training of mathematics, science and language teachers for schools, core science and engineering courses in technical education, general courses in social sciences, humanities and vocational courses.	No evaluation as yet.
Centrally Sponsored Scheme for Teacher Education (1986, revised in 2012 in light of the NCERT 2009 evaluation and in response to massive expansion of elementary and secondary schools)		
• Enhancing institutional capacity to ensure teacher education for all levels of school education. • Utilizing all possible kinds of institutions, including university departments of education and teacher training institutions in the private sector, for in-service training of the existing cadre at all levels.	• Central government grant to state governments to build and expand capacity for teacher preparation pursuant to the National Policy on Education (NPE) 1986. • District institutes of teacher education (DIETs), colleges of teacher education (CTEs) and IASEs were established across the country.	• DIETs were established but remained largely dysfunctional with poor staffing, lack of capacity, and low autonomy, mostly owing to a lack of coherent TE vision in the states and hesitation to engage due to uncertainties arising from dependence on central scheme funding (NCERT, 2009; NIAS 2007; TISS, 2017). • DIETs were poorly integrated with block and cluster resource centres (BRCs and CRCs) for continuing professional development and INSET (NIAS, 2007 and TISS, 2017). • Incidences of innovation were documented in MHRD CSSTE evaluation (TISS, 2017).
Sarva Shiksha Abhiyan, preceded by the District Primary Education Programme and Rashtriya Madhyamik Shiksha Abhiyan (for secondary school)		
Universalizing access to elementary school and improving school infrastructure, and quality through inclusion.	• Non-formal education centres and appointment of para teachers. • Establishment of sub-district structures such as block/urban resource centres for training, and CRCs for teacher meetings, with CRCs providing on-site school support to teachers. • Funding for in-service teacher education (initially twenty-one days, subsequently reduced to ten). • Support for monthly meetings at CRCs for teachers. • Inclusion of integrated education (IED) resources and personnel at BRCs.	• Para teachers were introduced into the formal system, and non-formal education centres were created. • Structure of BRCs and CRCs were created across all states. These, however, were not linked to DIETs and were largely functioning as a parallel system. • In-service training was widespread for primary school teachers, but its impact was found to be of uneven quality (Yadav, 2012).

Source: CETE research team, based on data gathered from government websites, www.education.gov.in, and research studies as cited.



'**Resilience of the education system**' has emerged as an essential concept along with recognition of the centrality of teachers and teaching in school education

Impact of the COVID-19 pandemic

This report is being prepared at a time when India and the world are dealing with the COVID-19 pandemic which has shown no signs of abating and has impacted the economy, livelihoods and human well-being, particularly affecting women and children. Widespread economic distress and loss of jobs, including internal migration back to villages has pushed families into poverty, and children into distressing situations including malnutrition, having to work and early marriages for girls.

Since March 2020, schools in India have not been functioning physically. Where possible, schools and teachers are engaging students online. Foundational learning, which is the focus of early grades, is set to slide even further down from current low levels. The use of technology in education for the purpose of teaching and learning has emerged as important, but this has also exposed a range of issues – lack of devices and Internet bandwidth for a significant proportion of students, lack of preparedness of teachers in the use of technology, and lack of resources in Indian languages.[8] It has also shown the limits of what can be achieved through technology, especially for younger children, and the associated fatigue and loss of interest. Where technology has worked, it is mostly because of the initiative taken by teachers to enhance interactivity, and additional investments of parents' time and resources. On the whole, the importance of teachers, and that of personal and social relationships in educational processes, have emerged strongly. At the same time, teachers working in non-elite fee-based private schools have also suffered job loss and significant pay cuts from already low salaries, raising concerns regarding their well-being. 'Resilience of the education system' has emerged as an essential concept along with recognition of the centrality of teachers and teaching in school education.

These are the challenges and issues that this State of Education in India report aims to address.

[8] DoSEL, October 2020, Compilation of Initiatives/ Actions Taken to Mitigate the Effect of Covid-19 Pandemic on Education of School Children Department of School Education and Literacy (DoSEL), MHRD, GoI. https://www.education.gov.in/sites/upload_files/mhrd/files/DOSEL_COMPILATION_ON_COVID_ACTIVITIES.pdf (accessed September 30 2021). Also see Chapter 6 of this report.



A teacher takes a political science class.
Gurukul Vidya Niketan, Uttarakhand, India.



CHAPTER 2

Profile of teachers in India

This chapter analyses the profile of teachers in India drawing on data from the Unified District Information System for Education (UDISE+) and the Periodic Labour Force Survey (PLFS), for the school year 2018/19. Teachers are classified by gender, caste, age, qualifications, type of school as well as working conditions. The chapter studies the extent to which teacher profile has evolved over time, and its variation between states, and rural and urban locations.

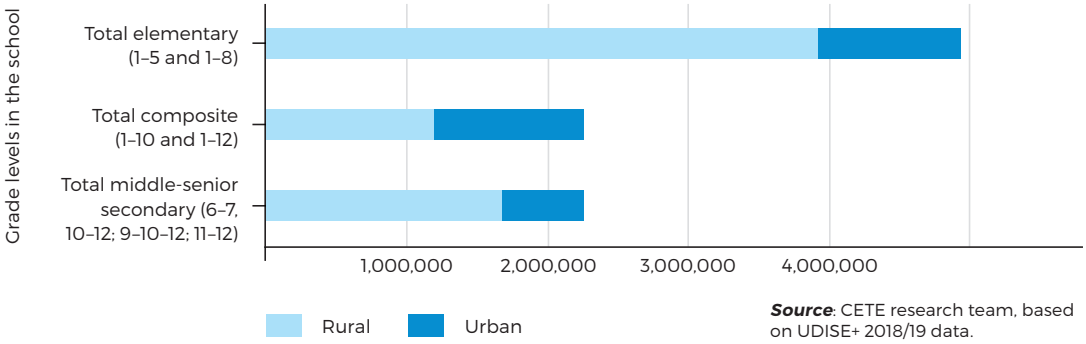
2 Profile of teachers in India

Teacher availability and deployment

Schools in India vary considerably according to levels, management type and medium of instruction. A two-decade-long government effort to improve access has increased the number of schools, students and teachers.

According to Unified District Information System for Education (UDISE+) data for the 2018/19 school year, a total of 9.4 million teachers were employed across 1.6 million primary and secondary schools (grade 1 to grade 12) in India. The figures for 2019/20 were nearly 9.7 million and 1.5 million respectively.

FIGURE 2.1
Number of teachers by school type (grades and levels) and rural or urban location, 2018/19



Source: CETE research team, based on UDISE+ 2018/19 data.

Below: A morning prayer for the new day. Caring with Color, Bengaluru, India.



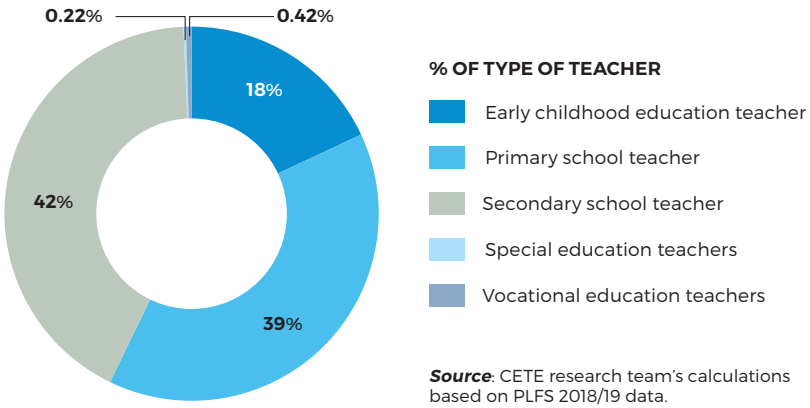


Above: Dance is like art; paint your vision and pursue it. G. D. Goenka Public School, Ghaziabad, India.

School type (levels and location)

Schools in India are diverse in terms of the grades/classes that they include and how the levels are administered. See Figure 2.1 for the different ranges found in schools (excluding Early Childhood Care and Education [ECCE] grades). This leads to highly school-specific teacher requirements, especially when factoring in the terms mandated by the Right to Education (RTE) Act (see Box 2.1). Overall, 52 per cent of teachers work in elementary schools (this includes 28 per cent of those who work in primary-only schools), 24 per cent in middle to senior secondary schools and 24 per cent in composite schools (see Figure 2.1). Among respondents of PLFS 2018/19, 2.25 per cent of the labour force were identified as teachers (across government and private schools).[9] Close to 42 per cent of all teachers taught in middle and secondary schools, 39 per cent taught in primary schools, and about 18 per cent of teachers were involved in early childhood education (See Figure 2.2).

FIGURE 2.2
Proportion of teachers by level of education and type of programme, 2018/19



Source: CETE research team's calculations based on PLFS 2018/19 data.

Rural and urban areas

In the school year 2018/19, about three-quarters of all teachers in India were working in schools located in rural areas (see Figure 2.1). Among them, 60 per cent were government school teachers, 26 per cent worked in private schools, and about 7 per cent worked in private aided schools. The proportion of teachers working in private unaided schools was much higher in urban areas at 57 per cent. 25 per cent of urban teachers worked in government schools and 12 per cent in private aided schools. The percentage of teachers working in rural areas was 80 or above in several states, including Assam, Bihar (85 per cent), Himachal Pradesh (89 per cent), Jharkhand (80 per cent), Meghalaya, Sikkim (86 per cent), Tripura (82 per cent), Uttar Pradesh and West Bengal (81 per cent) (see Table 2.1).

[9] PLFS 2018/19 data identified teachers on the basis of their industry (National Industrial Classification Code [NIC] 2008) and occupational codes (National Classification Of Occupation [NCO] 2004). Industry codes 85101 (early childhood education), 85102 (primary education), 85211 and 85212 (general secondary and senior secondary education), 85104 and 85213 (special education), 85221 and 85222 (vocational education) were considered. They were juxtaposed with selected occupation codes 232 (subject teachers), 233 (craft teachers), 331 (primary and middle school teachers), 333 (special educators) and 334 (vocational trainers). Given the three digit reporting of NCO codes, specific codes like 121, 122 and 347 which correspond to teachers but also include other occupations have been dropped from the study. We refer to these 'industries' as school levels/types.

TABLE 2.1

State-wise distribution of schools, teachers, single-teacher schools, schools with vacancies, and teacher requirements

(total number and percentage share of rural areas)

State/ Union territory	Total schools		Total teachers		Total women teachers	Single-teacher schools			Schools with vacancies (%)	Teacher requirement	
	N	% rural	N	% rural	%	N	% of total	% rural		N	% rural
Andaman	414	86%	5,533	68%	64%	20	5%	100%	0%	8	2%
Andhra Pradesh	63,621	80%	3,14,770	72%	49%	9,160	14%	91%	11%	27,398	41%
Arunachal Pradesh	3,793	88%	23,385	74%	46%	691	18%	99%	5%	399	64%
Assam	66,324	94%	3,75,986	86%	39%	3,383	5%	99%	12%	13,000	90%
Bihar	89,224	90%	5,84,327	85%	40%	3,700	4%	91%	56%	2,22,316	89%
Chhattisgarh	56,274	89%	2,69,870	76%	47%	4,205	7%	95%	11%	8,735	73%
Chandigarh	229	14%	9,887	10%	82%		0%	-	7%	89	28%
Daman Diu	140	70%	1,546	63%	66%	1	1%	0%	14%	92	45%
Delhi	5,703	4%	1,55,668	2%	74%	13	0%	8%	22%	3,801	2%
Dadra and Nagar Haveli	346	90%	3,247	74%	64%		0%	-	10%	234	36%
Goa	1,486	78%	13,676	64%	80%	239	16%	93%	3%	45	33%
Gujarat	54,581	77%	4,01,939	66%	53%	1,275	2%	87%	17%	30,869	39%
Himachal Pradesh	18,212	96%	1,01,654	89%	51%	1,566	9%	100%	2%	311	71%
Haryana	23,534	77%	2,42,135	63%	61%	461	2%	95%	11%	8,777	53%
Jharkhand	45,908	91%	2,13,642	80%	39%	6,200	14%	97%	40%	59,896	79%
Jammu and Kashmir	29,708	89%	1,76,459	78%	47%	2,230	8%	95%	2%	1,632	56%
Karnataka	78,233	72%	4,65,773	61%	55%	4,340	6%	92%	13%	43,383	38%
Kerala	16,701	80%	2,57,230	75%	78%	351	2%	93%	6%	5,657	66%
Lakshadweep	45	73%	1,059	71%	51%		0%	-	0%	0	
Maharashtra	1,09,942	77%	7,70,125	59%	47%	3,499	3%	91%	14%	74,445	33%
Meghalaya	14,669	93%	55,630	86%	57%	995	7%	97%	8%	1,946	76%
Manipur	4,844	85%	45,400	77%	54%	291	6%	97%	3%	590	74%
Madhya Pradesh	1,54,064	84%	5,79,424	69%	44%	21,077	14%	93%	22%	87,630	54%
Mizoram	3,913	67%	23,403	55%	44%	100	3%	90%	3%	147	50%
Nagaland	2,752	82%	32,015	70%	53%	25	1%	100%	2%	413	37%
Odisha	68,717	91%	3,40,477	84%	45%	3,197	5%	88%	11%	28,816	67%
Punjab	28,637	78%	2,72,358	62%	75%	366	1%	86%	7%	4,442	41%
Puducherry	739	53%	12,858	46%	73%	3	0%	67%	3%	95	4%
Rajasthan	1,05,883	83%	7,49,523	74%	39%	10,674	10%	94%	11%	21,789	69%
Sikkim	1,290	90%	14,277	86%	58%	15	1%	93%	0%	10	0%
Tamil Nadu	59,152	74%	5,61,466	58%	75%	2,631	4%	87%	6%	16,894	38%
Tripura	4,945	92%	46,909	82%	32%	42	1%	93%	3%	271	64%
Telangana	42,355	73%	2,57,367	62%	56%	6,678	16%	72%	16%	37,204	25%
Uttar pradesh	2,73,235	87%	13,15,338	81%	44%	17,683	6%	77%	33%	3,23,577	80%
Uttarakhand	23,559	89%	1,20,899	79%	54%	3,216	14%	97%	7%	7,027	61%
West Bengal	97,828	86%	6,15,584	81%	44%	2,644	3%	83%	13%	84,912	82%
Total	**1,551,000**	**84%**	**9,430,839**	**72%**	**50%**	**1,10,971**	**7%**	**89%**	**19%**	**1,116,846**	**69%**

Very good | Good | Moderately good | Average | Below average | Poor

Source: CETE research team, based on UDISE+ 2018/19 data.

PLFS 2018/19 data shows that the proportion of teachers working in rural areas varies according to education level, ranging from 78 per cent of early childhood education teachers, 59 per cent of primary school teachers and 53 per cent of secondary school teachers. The percentage of special and vocational education teachers who are working in rural locations is much lower at 16 per cent and 34 per cent respectively, indicating the sparse presence of such educational expertise in rural India. Overall, the proportion of women teachers in rural locations is less than that in urban locations. In rural areas, 28 per cent of primary school teachers are women versus 63 per cent in urban areas. However, early childhood education teachers are predominantly women, and 88 per cent of them are in rural areas. At the secondary school level, 24 per cent teachers in rural areas are women, versus 53 per cent in urban locations.

Pupil teacher ratio

The Right to Education Act lays down norms and standards to be used to estimate and plan for teacher availability (see Box 2.1). The norm for pupil teacher ratio (PTR) is 30:1 for grade 1 to grade 5 (primary) and 35:1 for grade 6 to grade 8 (middle school/upper primary). The act also specifies full-time subject teachers for grades 6 and 8 and part-time teachers for art, physical and work education. The states contacted while preparing this document reported using the 35:1 ratio to estimate teacher requirement in government schools during recruitment.

The national PTR average for all schools was 26:1 in 2018/19 (UDISE), and ranged from 23:1 for elementary schools to 28:1 in composite schools (see Table 2.2). These PTRs look well within the norm suggested by the RTE Act at the country level, but does not indicate if the PTR is met at the school level. Among primary-only schools, 22 per cent of have PTRs greater than 30:1. On the whole, secondary and senior secondary schools have PTRs between 43:1 and 47:1.

Below: An interactive class in the time of COVID-19. Rajkiya Intermediate College, Uttarakhand, India.



TABLE 2.2

Changes between 2013/14 and 2018/19

PTR (overall)	**-16% (31:1** to **26:1)**
Professionally qualified teachers	**+23%**
Graduate teachers	**+35%**
Single-teacher schools	**-5%**
Total schools with PTR > 35:1	**-28%**
Schools with functional drinking water availability	**+1%**
Schools with functional boys' and girls' toilets	**+16%** (boys) **+14%** (girls)

The total number of teachers in the system grew by 17 per cent from 8.9 million teachers in 2013/14 to 9.4 million in 2018/19. The overall PTR – reflecting the effort of the state to meet the RTE Act teacher-requirement guidelines – changed from 31:1 in 2013/14 to 26:1 in 2018/19. In the same period, the proportion of teachers employed in the private sector grew from 21 per cent in 2013/14 to 35 per cent in 2018/19. The proportion of private schools with teacher requirement (as per a PTR of 1:35) decreased by 10 per cent, while that of government schools decreased by 6 per cent.

Source: Authors, based on data from UDISE 2013/14 and UDISE 2018/19.

Note: Using UDISE data for 2009/10 would have allowed for examining the ten-year change – pre-RTE-Act and current. However, the classification of schools used in this database maps partially onto the UDISE 2018/19 data, compromising the possibility of meaningful comparisons and analyses. Moreover, enrolment data was captured in 2009/10 only until elementary school. Hence after pursuing this line of analyses, it was given up as the trends do not seem to be representative and valid.

BOX 2.1

Sections of the RTE Act prescribing norms and standards pertaining to teachers

The Right to Education Act specifies the PTRs that are to be maintained at the school level and requires that governance is aligned to ensure that these PTRs are not affected. The schedule also specifies numbers and types of teachers to be appointed based on student enrolment numbers in order to meet curricular needs.

25. PUPIL TEACHER RATIO

(1) 1 [Within three years] from the date of commencement of this Act, the appropriate government and the local authority shall ensure that the pupil teacher ratio, as specified in the schedule, is maintained in each school.

(2) For the purpose of maintaining the pupil teacher ratio under sub-section (1), no teacher posted in a school shall be made to serve in any other school or office or deployed for any non-educational purpose, other than those specified in Section 27.

THE SCHEDULE: NORMS AND STANDARDS FOR A SCHOOL

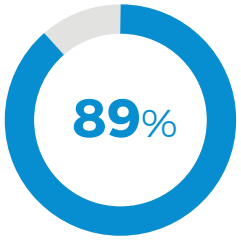
(See Sections 19 and 25)

Sr. No.	Item	Norms and standards
1.	**Admitted children**	**Number of teachers**
A	**For first class to fifth class**	
	Up to sixty	Two
	Between sixty-one to ninety	Three
	Between ninety-one to one hundred and twenty	Four
	Between one hundred and twenty-one to two hundred	Five
	Above one hundred and fifty children	Five plus one head teacher
	Above two hundred children	Pupil teacher ratio (excluding head teacher) shall not exceed forty
B	**For sixth class to eight class**	At least one teacher per class so that there shall be at least one teacher each for • science and mathematics • social studies • languages
	For every thirty-five children	At least one teacher
	Where admission of children is above one hundred	• One full-time head teacher • Part-time instructors for ~ art education ~ health and physical education ~ work education

Source: The Right Of Children To Free And Compulsory Education Act, 2009, Government of India. https://legislative.gov.in/sites/default/files/The%20Right%20of%20Children%20to%20Free%20and%20Compulsory%20Education%20Act,%202009.pdf (accessed August 15 2021).



are single teacher schools



of single-teacher schools are in rural areas

Single-teacher schools

Single-teacher schools number 110,971, i.e. 7.15 per cent (see Table 2.1). 89 per cent of these single-teacher schools are in rural areas. States with a high percentage of single-teacher schools include Arunachal Pradesh (18.22 per cent), Goa (16.08 per cent), Telangana (15.71 per cent), Andhra Pradesh (14.4 per cent), Jharkhand (13.81 per cent), Uttarakhand (13.64 per cent), Madhya Pradesh (13.08 per cent), Rajasthan (10.08 per cent).

Schools with vacancies and additional teacher requirement

UDISE captures data pertaining to available teachers in each school (see Table 2.1). However, sanctioned posts for each school are not reported, and hence vacancy-related information is inferred from the number of teachers in a school. In order to estimate vacancies, a PTR of 35:1 (also reported as the one used by states to estimate vacancies) gives an idea of teacher adequacy and requirements. Based on this, the estimated number of schools with vacancies at the country level stands at 301,166, or 19 per cent of all schools. States with vacancies higher than the national average include Bihar at 56.03 per cent, Jharkhand at 39.98 per cent, Uttar Pradesh at 32.66 per cent, Delhi at 21.94 per cent and Madhya Pradesh at 21.66 per cent.

Based on the PTR of 35:1, the total additional teacher requirement is found to be about 1,116,846. 69 per cent of total additional teacher requirement is in rural areas. States with large requirements include Uttar Pradesh (320,000), and Bihar (220,000), followed by Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, and West Bengal (between 60,000 and 80,000).

School size and compositeness

School size and compositeness have an effect on overall teacher management. The more 'composite' a school is, the more is the overall teacher availability, and the more access students will have, at every level, to specialized teachers for academic subjects, a larger variety of languages, as well as physical education, art, music, work education, etc. Teachers enjoy the benefits of a larger and varied professional community with the possibility of feedback and linkages across levels. The provision of school heads for higher grades and larger schools also brings in academic and administrative leadership, and the likelihood of academic planning and supervision.

Only 2 per cent of government school teachers work in composite schools from grades 1 to 10 or 1 to 12, as compared to 45 per cent in private schools and 13 per cent in government aided schools.

The overall average school size for primary-only schools is seventy-three, and that for government primary schools in rural areas is sixty-four. Multi-graded schools are therefore very likely in government primary schools in rural areas. With average school size at 172 for elementary schools (grade 1 to grade 8), and the possibility of at least six full-time teachers as per the RTE Act norms, the scenario of having adequate teachers improves considerably.

Data limitations: UDISE+ does not capture important aspects of teachers availability and deployment on the following parameters: the availability/deployment of teachers as per their subject area of teaching, or to meet the subject teaching requirements of schools; data on the availability of teachers for art, physical education, work education (RTE Act mandated) and of special educators; number of sanctioned posts in each school and related to this, school-wise vacancies. The availability of additional staff such as information and communications technology teacher, lab attenders. UDISE+ information pertaining to early childhood and vocational education is new and information-capture on these dimensions is yet to be made robust in terms of interpretation and analysis.

Above: A teacher putting in extra effort for effective learning. Rajkiya Intermediate College, Uttarakhand, India.



Approximately half of India's **9.7 million** school teachers are **women**

Demographic profile

Above: A student gets the teacher's undivided attention. RKJ.S.N.S.N.M. Inter College, Uttarakhand, India.

Opposite page: A majority of special education teachers in India are women.

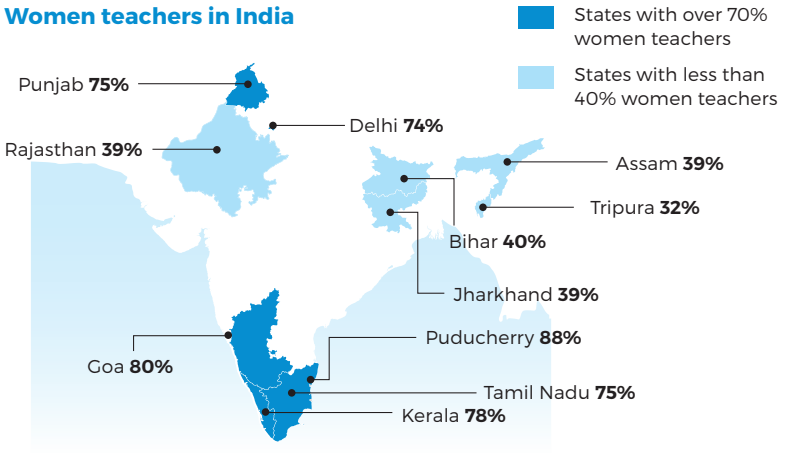
Ideally, the demographic profile of teachers should represent the population profile, especially in school education during the foundational years and the period of compulsory schooling. This ensures diversity of representation in schools in terms of gender, culture, language, disability as well as constitutional provisioning based on caste and tribe. At the time of independence, given the restricted access to higher education, teachers tended to be drawn from men of higher castes and social groups. Deepening of access to higher educational opportunities and affirmative action has led to more diversity in aspirants for teaching jobs, as well as among those employed as teachers. Operation Blackboard, the first centrally sponsored pan-India scheme to improve infrastructure in primary schools, recommended that all schools should have a minimum of two teachers, at least one of whom must be a woman. The Sarva Shiksha Abhiyan (SSA) and the National Policy on Education (NPE) 1986 recommended increasing the percentage of women teachers to 50 per cent as a strategy to improve girls' participation in schools (Samson and De, 2011). This has led to schemes that focus on ways to improve representation of socially marginalized groups and women in teaching (see Case study 1). Teaching in school constitutes one of the largest and most widespread forms of salaried employment, and hence is of interest to jobseekers. Therefore it is important to ensure, in addition to gender balance, the representation of different demographic groups, particularly the most marginalized. This is borne out when examining the effect of demographic interactions and social distance between students and teachers on learning outcomes. In their study, Rawal and Kingdon (2010) found that a student's achievement in a subject, in which the teacher was of the same gender, caste and religion as the child, was much higher than the same child's achievement in a subject taught by a teacher who was not. Chudgar and Sankar (2008) note the importance of female teachers to assure parents of the well-being and safety of their daughters, particularly important in gender-segregated societies.

Women teachers

About half of India's school teachers are women. State to state variation in the proportion of women teachers in the workforce is considerable (see Table 2.1).

States and union territories (UTs) where over 70 per cent teachers are women include several that are ranked high in the Performance Grading index (PGI). These include Chandigarh (82 per cent), Delhi (74 per cent), Kerala (78 per cent), Punjab (75 per cent) and Tamil Nadu (75 per cent). Other states/UTs with a higher proportion of women teachers are Puducherry (78 per cent) and Goa (80 per cent). Five states have a low proportion of women teachers (40 per cent or less): Assam (39 per cent), Bihar (40 per cent), Jharkhand (39 per cent), Rajasthan (39 per cent) and Tripura (32 per cent) (see Figure 2.3).

FIGURE 2.3
Women teachers in India



Source: CETE research team, based on UDISE+ 2018/19.

Women teachers tend to be concentrated in urban areas. 67 per cent of teachers in urban areas are women compared to 43 per cent of rural teachers. Teaching in the unaided private school sector is feminized. Overall, 62 per cent teachers are women in these schools, and up to 73 per cent teachers in private unaided schools located in urban areas are women.

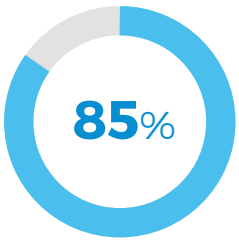
TABLE 2.3
Proportion of women teachers in different school education sectors

School Education Sector	% of total teachers	% of women teachers in each sector
Early childhood education teacher	18	85
Primary school teacher	39	43
Secondary school teacher	42	38
Special education teachers	0.22	59
Vocational education teachers	0.48	32

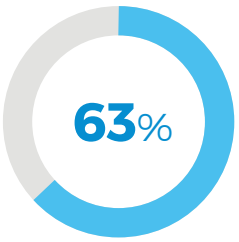
Source: CETE research team, based on PLFS 2018/19 data.

PLFS 2018/19 data shows us that some sectors are more feminized than others. Early childhood education leads with 85 per cent women teachers followed by special education at 59 per cent. The proportion of women teachers declines with the level of education. 43 per cent of primary school teachers, 38 per cent of secondary school teachers, and 32 per cent of vocational education teachers are women. (see Figure 2.4).

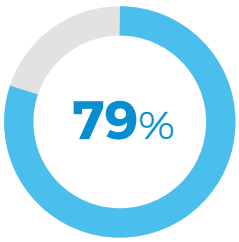
FIGURE 2.4
The most feminized school sectors



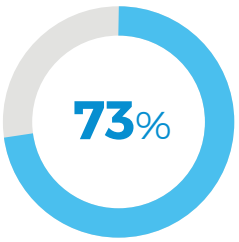
Early childhood educators (rural and urban) are very likely to be women



Primary school teachers in urban areas are more likely to be women



Special educators in rural areas are very likely to be women



Private unaided school teachers in urban areas are very likely to be women



Social groups

Scheduled Castes (SC), Scheduled Tribes (ST) and Other Backward Classes (OBC) groups are comparatively well represented among ECCE, primary and secondary school teachers. The overall proportions are comparable to their representation in the population. However, SC and ST groups are not represented in the case of special education, and very minimally represented in the case of vocational education (6 per cent and 8 per cent respectively, see Table 2.4). UDISE+ data on the population of teachers from SC, ST and OBC communities, as well as the linguistic profile of teachers, are not available. Data on availability and deployment of teachers by social group with reference to minorities and linguistic characteristics, is also not available.

TABLE 2.4
Representation of social groups in the teaching profession

School education sector	% of total teacher	Scheduled Tribes	Scheduled Castes	Other Backward Classes	Others
Early childhood education teacher	18%	9%	21%	38%	32%
Primary school teacher	39%	11%	14%	39%	36%
Secondary school teacher	42%	7%	13%	35%	45%
Special education teachers	0.22%	0%	0%	51%	49%
Vocational education teachers	0.48%	6%	8%	35%	51%

Source: CETE research team, based on PLFS 2018/19 data.

CASE STUDY 1

Initiatives to increase representation of women and marginalized communities in the teaching profession

Kasturba Gandhi Balika Vidyalaya (KGBV) residential schools for girls were started through a special scheme under Sarva Shiksha Abhiyan (SSA), and are concentrated in states with adverse enrolment and dropouts among girls, including Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Rajasthan and Uttar Pradesh. These schools employ five full-time women teachers and three part-time women teachers for every group of one hundred girls.

Some states such as Karnataka, Odisha, Rajasthan and Tamil Nadu have, for limited periods of time, reserved between 30 per cent and 50 per cent of recruitment for women, resulting in significant increases in women's representation. The requirement of graduation in Uttar Pradesh worked against women, especially those from SC, ST and minority groups, as they tend to have more limited opportunities for higher education. Bihar's policy of not deploying teachers within fifteen kilometres of their villages has also affected the attractiveness of the teaching profession for women. (Samson and De, 2011)

The revised **Centrally Sponsored Scheme of Teacher Education** (CSSTE) made a provision to establish Block Institutes of Education and Training (BIETs) to offer pre-service teacher education programmes in high minority-concentration districts, or in districts and towns with a high proportion of SC and ST populations, and thereby enhance the supply of qualified teachers from these groups (Ministry Of Human Resource Development [MHRD], 2012). The evaluation of the CSSTE scheme in 2017 noted that MHRD had announced the establishment of 196 new BIETs in 2013, but this never took off. In the 11 states sampled in the evaluation study, 102 new BIETs had been sanctioned, but only 5 were found to be functional. There were faculty shortages and inadequate infrastructure in the institutions that were visited. The Teacher Education Approval Board (TEAB) minutes revealed that administrative logjams and financial roadblocks had led to proposals not being sanctioned, and revisions in the scheme. The report observed that there was a need to involve local youth in the teaching profession and create a dynamic group of trained professionals to address contextual issues. It also observed a communication gap with regard to the vision and aims of the BIETs among various stakeholders. (TISS, 2017: 93–98).

The **National Education Policy** (**NEP) 2020** calls for scholarships to be offered to students from rural backgrounds enrolling in teacher education programmes.

Source: as cited.

Opposite page: Attentive teachers at a workshop on professional qualifications. Ranchi, Jharkhand.

Age

PLFS 2018/19 data suggests that the teaching cadre is generally young (see Figure 2.5), with over 65 per cent of teachers aged less than forty-four years. The median age of school teachers is thirty-eight, and the average family size is four. Thus, a large proportion of teachers are likely to be married and parents of school-going children themselves. These considerations are relevant to understanding reasonable wage level requirements as well as teachers' right to personal lives in connection with posting in difficult-to-staff areas.

FIGURE 2.5
Age profile of teachers, and teaching replacement

30.79%
of teachers are young who will be in the system for the next thirty to forty years.

34.49%
will retire in the next fifteen to twenty-five years and will need to be replaced.

22.7%
will retire in the next five to fifteen years and will need to be replaced.

5.1%
will retire in the next five years and will need to be replaced.

The overall teacher requirement may go down, given shifts in the school-going demographic.

However, requirements of secondary school teachers in early childhood education will go up when there is a shift towards universal provisioning, as will requirements for vocational education teachers and teachers for areas such as art/craft, music and physical education.

Source: CETE research team, based on PLFS 2018/19 data.

Professional qualifications



The availability of a professionally qualified teacher is now a mandated requirement for a school to be recognized. As there are different professional requirements at every school level (early years/primary/foundational years, middle school and secondary school) and curricular area (various academic subjects and vocational education), and also to ensure the inclusion of children with special needs, the availability of teachers with the right relevant qualifications is an important part of school provisioning. Successive regulations by the National Council of Teacher Education (NCTE) has formalized the need for professional qualifications for teachers, in addition to basic academic qualifications.

The current eligibility requirements draw from the RTE Act and include three aspects:[10]

1. Academic qualification (senior secondary school completion for teaching classes 1 to 5, undergraduate degree in a pre-specified range of subjects deemed relevant to school teaching for classes 6 to 8 and secondary school).
2. Professional qualification in teaching.
3. Passing the Teacher Eligibility Test (either at the centre or the state level).

[10] Drawing from Section 23 of the Right to Education Act, the central government designated the NCTE as the academic authority to lay down the minimum qualifications for a person to be eligible to be appointed as teacher, giving the NCTE regulations on this subject legal force. The NCTE notification dated August 2 2011 defines specific qualifications for teachers for classes 1 to 5 and for classes 6 to 8.



76 per cent of government teachers, **79 per cent** of teachers in government aided schools and **86 per cent** of teachers in private unaided schools are graduates

Above: An art teacher guides his student. Ahlcon International School, Delhi, India.

A range of measures to expand access to schools had led to a widespread lowering of standards for teacher employment in large-scale initiatives such as Lok Jumbish in Rajasthan and the Education Guarantee Scheme (EGS) of the District Primary Education Project (DPEP) in Madhya Pradesh, favouring employing local persons as teachers from the 1980s onwards. Also, in a bid to meet the requirements of the RTE Act, several states – especially in the central, northern, eastern and north-eastern parts of India – employed large numbers of teachers who often had lower academic qualifications and no professional qualifications. This effectively gave rise to large numbers of untrained and underpaid contractual teachers in the system.

The states of Assam, Madhya Pradesh, Manipur, Meghalaya, Odisha, Tripura, Uttar Pradesh, Uttarakhand and West Bengal[11] were given an exemption and asked to train all untrained teachers within a specific time limit. Several states launched large-scale programmes to train untrained teachers.

The quality of this training, often conducted during school breaks in the open and distance learning (ODL) format, has varied widely from state to state, making NCTE inspections and oversight necessary in an effort to maintain minimum standards. In Chhattisgarh, technology was deployed to plan and execute the programme with greater monitoring and oversight of teachers' work, and higher quality training resources were developed (NCTE, 2014). Subsequently, recruitment, whether of regular or contractual teachers (earlier called para teachers, *vidyasahayaks*, etc.) have adhered to the mandated eligibility criteria. As a result, between 2013/14 and 2018/19, there has been a significant (23 per cent) increase in professionally qualified teachers, with a 35 per cent increase in the number of graduates among teachers (see Table 2.2). However, most states that had a backlog in 2014 (NCTE, 2014) are yet to meet their targets with the exception of Himachal Pradesh, Odisha and Uttar Pradesh.

Overall, 80 per cent of all teachers are graduates and 84 per cent have professional qualifications, including 2 per cent who are pursuing professional qualifications. 76 per cent of government teachers, 79 per cent of teachers in government aided schools and 86 per cent of teachers in private unaided schools are graduates. 90 per cent of government school teachers and 93 per cent of teachers in aided schools have professional qualifications. Only 77 per cent of teachers in private unaided schools are professionally qualified.

Box 2.2 is based on the recently released 2019/20 data round of UDISE+. The largest proportion of underqualified teachers are in private unaided schools, ranging from 41 per cent in primary education to about 61 per cent at the senior secondary level. This is followed by the government school sector, accounting for up to 17.25 per cent of underqualified teachers at the upper primary level and 35.78 per cent teachers at the primary level. Madrasa schools, private unaided and unrecognized schools account for most of the underqualified teachers.

There is considerable variation between states (based on UDISE+ 2018/19). Sixteen states have over 90 per cent teachers with professional qualifications – 97 per cent in Andaman and in Kerala – while the proportion is less than 50 per cent in others, with Meghalaya at 44 per cent.

Almost all states have instituted passing the Teacher Eligibility Test (TET) as a mandatory requirement.

***Data limitations**: The UDISE has not yet begun gathering and publishing information on teacher qualification in TET. The academic subject areas of teachers are also not available. Subject-wise teacher requirements are specified in the RTE Act, but information captured on UDISE does not help analyse availability of qualified subject teachers. While information regarding ECCE teachers is captured, it is not very clear what definitions have been used to determine their professional qualifications.*

[11] https://www.education.gov.in/en/rte_rules

BOX 2.2

How qualified are teachers in India?

In India, a significant share of teachers in the pre-primary, primary and upper primary levels neither possess an academic degree* from a college (a graduate or a postgraduate degree) nor a professional degree (such as a Bachelor of Education [B.Ed.], or a certificate in basic teachers training). While the share of such underqualified teachers was in general lower in the secondary and higher secondary levels, some states did have quite a few underqualified teachers at these levels. For instance, in Andhra Pradesh, 10 per cent of upper primary and 8 per cent of secondary level teachers were underqualified. The problem is more acute at lower levels, especially across most north-eastern states. Most such teachers are concentrated in private unaided schools and institutions managed by the Department of Education. The data is sourced from the latest UDISE report for 2019/20.

Percentage of underqualified teachers: state-wise

States/UTs	Pre-primary (%)	Primary (%)	Upper primary (%)	Secondary (%)	Higher secondary (%)
Karnataka	1.66	0.06	0.03	0.02	0.14
Goa	10.28	0.57	0.03	0.02	0.09
Kerala	0.09	0.22	0.06	0.02	0.00
Gujarat	1.51	0.17	0.08	0.02	0.03
Maharashtra	2.84	0.46	0.22	0.08	0.09
Haryana	4.16	1.38	0.24	0.06	0.04
Himachal	2.87	0.78	0.25	0.15	0.06
Telangana	1.42	0.52	0.31	0.12	0.04
Tamil Nadu	1.96	0.54	0.50	0.24	0.13
West Bengal.	8.10	7.53	0.54	0.08	0.05
Uttarakhand	3.47	2.54	0.56	0.08	0.06
Rajasthan	7.22	3.25	0.66	0.13	0.08
Punjab	5.91	3.42	1.26	0.34	0.20
Uttar Pradesh	2.63	2.93	1.49	0.54	0.32
Odisha	2.86	3.46	1.61	0.45	0.34
Tripura	19.8	51.65	1.66	0.19	0.14
Chhattisgarh	12.69	6.11	3.29	0.48	0.29
Sikkim	37.53	22.55	3.43	0.79	0
Manipur	16.02	11.66	3.58	0.4	0.05
Mizoram	17.1	7.05	3.6	0.67	0.05
Arunachal	17.07	11.51	4.06	0.28	0.07
Jammu and Kashmir	15.35	14.18	6.63	0.57	0.11
Madhya Pradesh	8.60	2.89	7.55	0.31	0.21
Jharkhand	12.03	9.20	7.67	0.56	0.33
Andhra Pradesh.	–	8.39	10	8.32	2.28
Assam	17.39	19.49	12.61	2.96	0.47
Bihar	16.16	8.47	12.95	2.76	1.32
Meghalaya	33.17	33.91	15.03	2	0.2
Nagaland	20.77	30	15.5	1.84	0.17
India	**7.69**	**4.56**	**3.27**	**0.75**	**0.22**

Percentage of underqualified teachers: level-wise

Type of schools	Pre primary (%)	Primary (%)	Upper primary (%)	Secondary (%)	Higher secondary (%)
Private unaided	50.81	41.33	55.38	51.94	60.57
Department of education	36.66	35.78	17.25	20.04	23.69
Government aided	0.93	1.79	5.34	6.21	9.87
Madrasa recognized	0.34	2.35	1.79	0.89	1.23
Navodaya Vidyalaya	0	0	0.01	0.13	0.73
Unrecognized	6.65	12.67	16.9	2.76	0.59
Kendriya Vidyalaya	0.01	0.03	0.1	0.92	0.55
Local body	3.38	3.46	2.22	14.06	0.23
Tribal welfare dept.	0.06	1.69	0.42	1.79	0.23
Madrasa unrecognized	1.08	0.74	0.37	0.46	0.23

PERCENTAGE OF UNDERQUALIFIED TEACHERS: STATE-WISE

The table shows the percentage of teachers who are underqualified across states at various levels of education. For instance, about 16 per cent of pre-primary, 8 per cent of primary, 13 per cent of upper primary, 3 per cent of secondary and 1 per cent of higher secondary teachers were underqualified in Bihar. In general, the share of such teachers decreases as the level of education increases.

PERCENTAGE OF UNDERQUALIFIED TEACHERS: LEVEL-WISE

The table lists the percentage of teachers who are underqualified across education levels. For instance, of all the under-qualified teachers at the higher secondary level, about 60 per cent are in private unaided (recognized) schools while 24 per cent are in schools run by the Department of Education.

Source: The Hindu, Friday, July 9 2021, p. 7.

Continued on next page

Percentage of underqualified teachers: management-wise

Type of schools	Pre-primary (%)	Primary (%)	Upper primary (%)	Secondary (%)	Higher secondary (%)
Madrasa unrecognized	31.9	12.5	10.4	5.9	3.3
Madrasa recognized	9.5	8.5	8.4	3	2.7
Unrecognized	16.9	22.5	19.7	4.3	0.4
Private unaided	10.2	5.4	3.7	1	0.3
Jawahar Navodaya Vidyalaya	0	0	0.3	0.3	0.3
Local body	18.8	1.4	1.3	2.3	0.1
Tribal welfare dept.	8.2	4.8	1.9	1.1	0.1
Kendriya Vidyalaya	0.7	0.4	1.5	0.9	0.1
Department of Education	5.1	3.8	1.6	0.4	0.1
Government aided	6.5	2	2.7	0.3	0.1

PERCENTAGE OF UNDERQUALIFIED TEACHERS: MANAGEMENT-WISE

This table lists the percentage of teachers who are underqualified in various kinds of schools.
For instance, in private unaided schools, 10 per cent of pre-primary, 5.4 per cent of primary, 3.7 per cent of upper primary, 1 per cent of secondary and 0.3 per cent of higher secondary teachers are underqualified. Madrasa schools, in general, have a higher share of such teachers.

Note: Academic degree from a college includes graduate, post-graduate, M.Phil., PhD, postdoctoral degrees. Professional degree: B.El.Ed, B.Ed, diploma or certificate in basic teachers training, diploma or degree in special education, M.Ed or pursuing any relevant course.

Source: The Hindu, Friday, July 9 2021, p. 7.

Service environment

NEP 2020 notes the primacy of providing a supportive service environment and culture to enable teachers to do their job effectively. This issue is also at the core of the UNESCO teacher policy guidelines (2015) that note the need for a working environment that will motivate individual teachers and the school team to achieve high levels of professional teaching and job satisfaction, enable focus on core teaching-learning responsibilities and maximize teaching effectiveness. In this section, UDISE+ data is used to examine the availability of infrastructure and teaching-learning resources, including basic amenities, basic professional requirements, as well as academic leadership and support for teachers. The UDISE+ data which is generally used as a metric of inputs to students, also serves as an indicator of teachers' service environment and working conditions. Additional dimensions of working conditions identified in the UNESCO teacher policy guidelines, such as workload, non-teaching work and work-life balance are taken up in the next chapter.

Below: Talent meets hard work. Ahlcon International School, Delhi, India.



Basic amenities

Access to basic amenities in schools has improved considerably. Yet, wide variations exist between states, as well as between rural and urban areas, in terms of access and provision of drinking water and functional toilets for both boys and girls – parameters that have come into focus over the last five years. Provision of electricity in schools is improving but progress has been limited when it comes to having all classrooms in a usable condition (see Table 2.5).

TABLE 2.5

State-wise teacher working conditions: basic amenities in schools

State/ union territory	Total schools	% rural schools	Access by road	Availability of drinking water (functional)	Availability of boys' toilets (functional)	Availability of girls' toilets (functional)	Availability of electricity (working)	All classrooms in good condition	PGI 2021
Andaman	414	86%	86%	100%	97%	98%	92%	57%	1++
Andhra Pradesh	63,621	80%	100%	77%	60%	68%	93%	64%	1
Arunachal Pradesh	3,793	88%	68%	52%	64%	65%	40%	37%	4
*** Assam**	66,324	94%	80%	86%	66%	70%	30%	28%	3
(Rural-Urban)			79%- 95%	86%-92%	65%-80%	69%-84%	27%-80%	27%-43%	
Bihar	89,224	90%	84%	99%	96%	97%	78%	60%	3
*** Chhattisgarh**	56,274	89%	91%	89%	73%	97%	81%	67%	4
(Rural-Urban)			91%- 96%	89%-90%	73%-80%	97%-95%	79%-94%	65%-80%	
Chandigarh	229	14%	100%	100%	99%	100%	100%	85%	1++
Daman Diu	140	70%	98%	100%	96%	96%	100%	92%	1+
Delhi	5,703	4%	100%	100%	87%	83%	100%	88%	1+
Dadra and Nagar Haveli	346	90%	91%	100%	93%	95%	100%	74%	1+
Goa	1,486	78%	100%	100%	99%	99%	100%	87%	2
Gujarat	54,581	77%	98%	100%	96%	97%	100%	76%	1+
Himachal Pradesh	18,212	96%	85%	100%	96%	97%	95%	58%	1
Haryana	23,534	77%	98%	100%	92%	95%	98%	76%	1+
*** Jharkhand**	45,908	91%	66%	91%	93%	95%	73%	73%	2
(Rural-Urban)			63%-88%	91%-91%	93%-92%	95%-96%	71%-88%	72%-84%	
Jammu and Kashmir	29,708	89%	80%	94%	81%	83%	64%	54%	2
*** Karnataka**	78,233	72%	99%	99%	88%	91%	89%	63%	1
(Rural-Urban)			99%-99%	99%-98%	89%-87%	92%-91%	88%-90%	55%-83%	
Kerala	16,701	80%	97%	99%	97%	98%	99%	71%	1++
Lakshadweep	45	73%	91%	100%	98%	100%	100%	91%	2
*** Maharashtra**	1,09,942	77%	98%	97%	89%	92%	87%	71%	1+
(Rural-Urban)			97%-99%	97%-99%	88%-94%	91%-96%	83%-98%	65%-91%	
*** Meghalaya**	14,669	93%	61%	34%	63%	59%	19%	42%	5
(Rural-Urban)			59%-89%	32%-61%	62%-75%	58%-74%	16%-59%	40%-64%	
Manipur	4,844	85%	86%	86%	67%	68%	48%	40%	2
Madhya Pradesh	1,54,064	84%	90%	89%	92%	94%	55%	68%	3
Mizoram	3,913	67%	94%	93%	81%	81%	74%	42%	3
Nagaland	2,752	82%	82%	59%	88%	88%	63%	57%	4
Odisha	68,717	91%	92%	99%	90%	93%	38%	90%	1
*** Punjab**	28,637	78%	97%	100%	90%	93%	100%	68%	1++
(Rural-Urban)			97%-96%	100%-100%	89%-93%	92%-95%	100%-100%	63%-85%	
Puducherry	739	53%	99%	100%	95%	95%	100%	90%	!+
Rajasthan	1,05,883	83%	83%	87%	78%	82%	71%	67%	1+
Sikkim	1,290	90%	84%	100%	98%	93%	98%	50%	2
Tamil Nadu	59,152	74%	1%	94%	93%	97%	100%	79%	1++
Tripura	4,945	92%	84%	73%	74%	76%	34%	37%	1
Telangana	42,355	73%	93%	89%	85%	92%	89%	70%	2
Uttar pradesh	2,73,235	87%	92%	90%	91%	92%	66%	71%	1
Uttarakhand	23,559	89%	68%	89%	88%	90%	82%	54%	2
West Bengal	97,828	86%	86%	91%	93%	96%	89%	41%	1
Total India	**15,51,000**	**84%**	**86%**	**91%**	**87%**	**90%**	**74%**	**65%**	
Rural-Urban			**85%-89%**	**91%-93%**	**87%-89%**	**90%-92%**	**71%-91%**	**62%-83%**	

Note: PGI: Performance Grading Index, 2021
* States selected are for their PGI 2021 level and regional spread.
Rural-urban differences are provided for the selected states.

Very good (90%-100%) | Average (50%-69%) | Good (70%-89%) | Below Average (< 49%)

Source: CETE research team, based on UDISE+ 2018/19 data and PGI, 2021.



Above: Clean and functional drinking water is not a luxury but a necessity at school.

ROAD ACCESS

On an average, 86 per cent of schools across the country – 89 per cent of urban schools and 85 per cent of rural schools – are accessible by road. In hilly or mountainous states and union territories, such as in the north-east, Himachal Pradesh, and Jammu and Kashmir, the proportion drops to between 59 per cent and 68 per cent. On the other hand, between 97 per cent and 100 per cent of schools in Andhra Pradesh, Chandigarh, Daman and Diu, Goa, Gujarat, Haryana, Karnataka, Kerala, Maharashtra, Puducherry and Punjab are accessible by road.

While distance from headquarters could serve as an indicator of accessibility through public transport, 2018/19 data does not provide this metric. With provisioning of staff quarters still not on the agenda, teachers prefer to live in larger villages and towns in the district in order to balance their personal life with professional commitments, making long daily commutes to school a part of the teachers' reality in rural areas. Dawn et al. (2016) found that teachers experienced stress where the commute took longer than an hour. This is also important in relation to the earlier observation on the median age of teachers and the life-stage in which they are likely to be.

DRINKING WATER AND TOILETS

Functional drinking water is available in 91 per cent of schools. Four states in the north-east however have much lower provisioning, with Arunachal Pradesh at 52 per cent, Meghalaya at 34 per cent, Nagaland at 59 per cent and Tripura at 73 per cent. In the South, Andhra Pradesh has the lowest provisioning at 77 per cent.

Functional boys' (men's) toilets are available in 87 per cent of rural schools and 89 per cent of urban schools. 90 per cent of rural schools and 92 per cent of urban schools have functional girls' (women's) toilets. The north-eastern states have much lower provisioning, ranging from as low as 58 per cent availability of girls' (women's) toilets to 63 per cent availability of boys' (men's) toilets in rural Meghalaya. Chhattisgarh, Rajasthan and Andhra Pradesh are some other states with relatively lower levels of provisioning of basic amenities. (see Table 2.5)

Between 2013/14 and 2018/19, availability of functional drinking water increased marginally by 1 per cent. The provisioning of functioning toilets for boys and girls increased significantly by 14 per cent and 16 per cent respectively in the same time period (see Table 2.2).

ELECTRICITY

Availability of functioning electricity varies widely between states and between rural and urban areas. On an average, 71 per cent of rural schools and 91 per cent of urban schools across the country have electricity, adding up to a national average of 74 per cent. All states rated at the 1++, 1+ levels, and most states rated at 1 level in PGI 2021 have 100 per cent electrification at schools. Very low levels of electrification are reported from schools in Odisha (38 per cent) and the north-eastern states of Arunachal Pradesh (40 per cent), Assam (30 per cent), Meghalaya (19 per cent) and Tripura (34 per cent). The percentage of rural schools in these states that have functional electricity is even lower.

CONDITIONS OF CLASSROOMS

Overall, only 65 per cent of schools (62 per cent of rural schools and 83 per cent of urban schools) have all classrooms in 'good condition'. In several states and union territories, less than 60 per cent of schools have all classrooms in good condition, with state averages falling as low as 28 per cent in Assam, 37 per cent in Tripura and 41 per cent in West Bengal (see Table 2.5).

Professional work environment

The availability and quality of teaching-learning materials and educational supplies including textbooks play a major factor in teacher satisfaction and motivation (UNESCO 2015). This is borne out by the findings of the National Achievement Survey (NAS) 2017.

> NAS 2017 reiterates that facilitation of students' learning, teacher quality and institutional resources are the prominent determinants of the learning levels of students … School related factors such as functional libraries, monitoring of the schools by the department of education and participation of schools in literary activities influence the learning achievement of students. Similarly, teacher related factors such as their engagement in professional development, peer support and networking, and job satisfaction significantly contribute to learning achievement of students (National Council of Educational Research and Training [NCERT] 2020: xxvi, emphasis added).

TABLE 2.6

Professional working conditions in schools

State/ Union territory	Total schools	Availability of library	Availability of Internet	Availability of ICT lab	Visits by academic supervisor (CRC or BRC)	Schools receiving free textbooks	PGI-2021
Andaman	414	77%	26%	14%	95%	80%	1
Andhra Pradesh	63,621	61%	17%	0%	70%	71%	4
*** Assam**	66,324	46%	6%	3%	89%	89%	3
(Rural-Urban)		46%–57%	4%–23%	3%–14%	90%–78%	91%–66%	
Bihar	89,224	32%	7%	2%	68%	72%	3
*** Chhattisgarh**	56,274	80%	5%	1%	92%	95%	4
(Rural-Urban)		80%–77%	3%–24%	1%–1%	94%–82%	96%–88%	
Chandigarh	229	93%	97%	66%	91%	56%	1++
Daman Diu	140	63%	73%	25%	86%	82%	1+
Delhi	5,703	95%	82%	23%	100%	55%	1+
Dadra and Nagar Haveli	346	97%	22%	11%	88%	88%	1+
Goa	1,486	78%	40%	16%	95%	85%	2
Gujarat	54,581	76%	67%	8%	78%	76%	1+
Himachal Pradesh	18,212	84%	22%	16%	75%	86%	1
Haryana	23,534	86%	41%	17%	64%	62%	1+
*** Jharkhand**	45,908	89%	30%	2%	80%	80%	2
(Rural-Urban)		89%–84%	28%–46%	1%–10%	83%–54%	84%–42%	
Jammu and Kashmir	29,708	36%	12%	5%	73%	79%	2
*** Karnataka**	78,233	88%	12%	5%	79%	93%	1
(Rural-Urban)		88%–88%	7%–25%	3%–8%	82%–70%	95%–86%	
Kerala	16,701	85%	88%	27%	78%	91%	1++
Lakshadweep	45	96%	84%	22%	100%	100%	2
*** Maharashtra**	1,09,942	81%	34%	11%	94%	83%	1+
(Rural-Urban)		81%–84%	23%–70%	8%–19%	98%–85%	89%–60%	
*** Meghalaya**	14,669	4%	4%	2%	83%	63%	5
(Rural-Urban)			2%–23%	1%–8%	85%–62%	65%–45%	
Manipur	4,844	17%	13%	4%	91%	74%	2
Madhya Pradesh	1,54,064	90%	11%	0%	75%	83%	3
Mizoram	3,913	10%	7%	3%	89%	59%	3
Nagaland	2,752	27%	15%	5%	62%	72%	4
Odisha	68,717	94%	6%	6%	70%	84%	1
*** Punjab**	28,637	72%	46%	22%	65%	63%	1++
(Rural-Urban)		68%–88%	41%–66%	23%–21%	75%–30%	72%–31%	
Puducherry	739	88%	67%	28%	91%	76%	!+
Rajasthan	1,05,883	65%	30%	11%	75%	58%	1+
Sikkim	1,290	45%	19%	11%	90%	88%	2
Tamil Nadu	59,152	61%	24%	1%	100%	100%	1++
Tripura	4,945	15%	3%	1%	86%	95%	1
Telangana	42,355	88%	18%	3%	1%	86%	2
Uttar Pradesh	2,73,235	40%	11%	2%	57%	68%	1
Uttarakhand	23,559	59%	16%	5%	76%	71%	2
West Bengal	97,828	71%	7%	4%	67%	89%	1
Total India	**15,51,000**	**66%**	**19%**	**5%**	**73%**	**78%**	
Rural-Urban		**64%–73%**	**14%–42%**	**4%–10%**	**76%–57%**	**83%–56%**	

Note: PGI: Performance Grading Index, 2021
* States selected are for their PGI 2021 level and regional spread.
The rural-urban gap is provided for the selected states.

Source: CETE research team.



Above: Technology to encourage effective learning. RKJ.S.N.S.N.M. Inter College, Uttarakhand, India.

Table 2.6 examines receipt of textbooks, supervisory visits, and availability of academic infrastructure including libraries, computer labs and Internet facilities.

RECEIPT OF FREE TEXTBOOKS

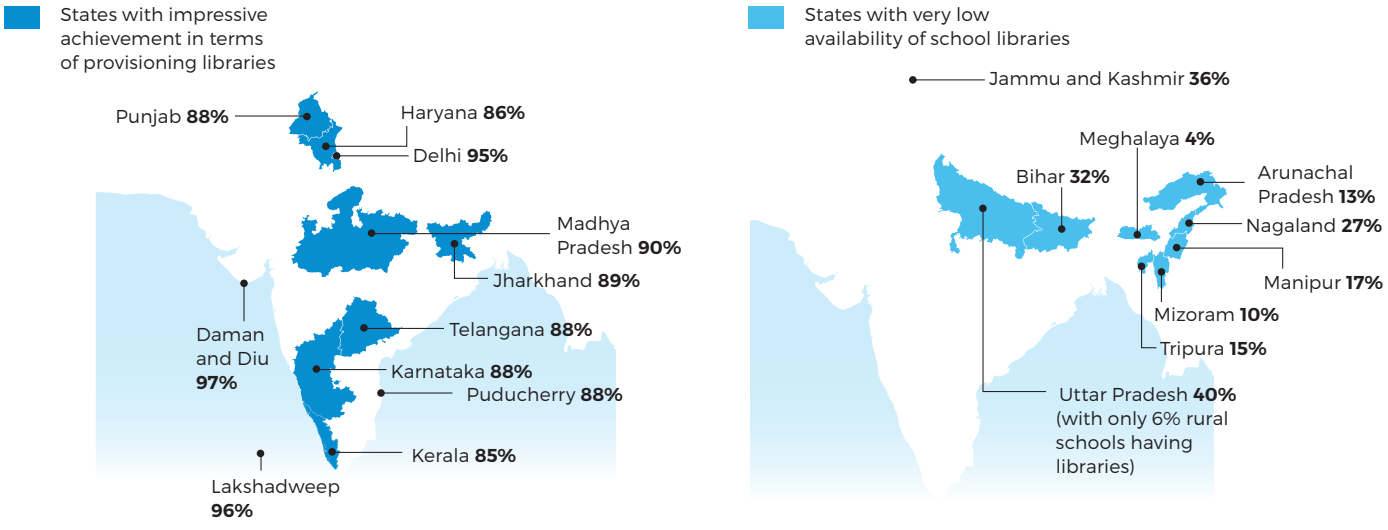
Students in government elementary schools are entitled to free textbooks. Since the nature of UDISE data makes specific estimation difficult, total free textbook receipt figures have been used as an indicator of the same in government elementary schools. In total, 78 per cent of schools received free textbooks. States with low levels of coverage include north-eastern states such as Meghalaya (63 per cent) and Mizoram (59 per cent).

LIBRARIES AND TEACHING-LEARNING RESOURCES

On the whole, prevalence of libraries in schools is low. 66 per cent of all schools, (64 per cent of rural schools and 73per cent per cent of urban schools) have libraries.

Sankar and Linden (2014) have found that government schools were generally better off with respect to teaching-learning resources than private schools. For example, while around 57 percent of government classrooms had some teaching-learning material (TLM) displayed, less than a third of classrooms in private schools did. This finding is consistent with the reported

FIGURE 2.6
Availability of libraries in schools



Source: CETE research team, based on UDSIE+ 2018/19 data.

concerns of teachers in private schools about lack of materials proving to be a significant hurdle to teaching.

AVAILABILITY OF COMPUTING DEVICES AND INTERNET

With professional resources and professional development being provided online, and with school administrative work increasingly requiring access to computing devices and Internet, their availability in schools are an aspect of professional working conditions. Providing these resources has not been treated as 'essential' and 'must-have' but 'nice-to-have', and are driven through central government schemes such as ICT@Schools and various state government initiatives.

The overall availability of computing devices (desktops or laptops) in school is 22 per cent for all India, with rural areas seeing much lower provisioning (18 per cent) than urban areas (43 per cent). Access to internet in schools is 19 per cent all over India – only 14 per cent in rural areas compared to 42 per cent in urban areas.

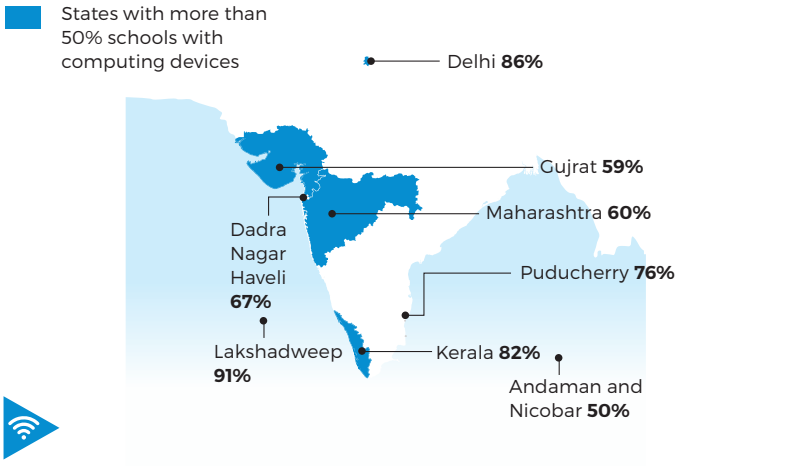
VISITS BY ACADEMIC SUPERVISORS

Overall, 73 per cent of all schools (76 per cent of rural and 57 per cent of urban schools) report visits by academic supervisors such as block and cluster resource persons and district academic inspectors. Government elementary schools are systematically linked with supervision by block and cluster resource persons (BRCs and CRCs), largely through the systems established by Sarva Shiksha Abhiyan. The coverage indicates that private and secondary schools too are visited by academic supervisors. Norms and protocols regarding such visits vary unevenly across schools according to management type and level.

- Lower coverage of supervision visits are reported in the states of Bihar (68 per cent),Nagaland (62 per cent), Punjab (65 per cent), Uttar Pradesh (57 per cent) and West Bengal (67 per cent).
- Overall, urban schools seem to receive less supervision visits – with as low as 30 per cent schools visited in Punjab. This may partly be due to a higher proportion of private unaided schools in urban areas, but is also indicative of issues with the functioning of block and cluster resource centres (BRCs and CRCs) in urban areas.
- The states of Delhi and Tamil Nadu, and the union territory of Lakshadweep report 100 per cent coverage.

FIGURE 2.7

Availability of computing devices and Internet



Source: CETE research team, based on UDSIE+ 2018/19 data.

Data limitations: *In addition to these basic amenities and provisions that are provided at the school level, and which teachers share with students, data on other amenities more specific to teachers' working conditions are not available in UDISE+. This includes availability of staff room, availability of head teacher, availability of public transport to reach school (as data on distance of school from headquarters, which could have served as a proxy, is no longer available in UDISE+), living quarters for teachers in (remote) rural areas and availability of support staff (librarian, lab assistant, clerical staff in larger schools, etc.).*

CASE STUDY 2

Aspirational districts: availability, deployment and service conditions of teachers

The 115 aspirational districts represent districts with low human development indices. In order to examine if teachers face greater challenges in these districts, seven aspirational districts have been selected for comparison with the state metric, one each from states at different levels of the Performance Grading Index 2020, and regional spread.

All India: SC 16.6 per cent; ST 6.6 per cent; female literacy (all) 65.46 per cent, as per 2011 census

PGI Level II: Punjab (North) – Firozpur (SC 42 per cent; female literacy 62.2 per cent)

PGI Grade I+: Maharashtra (West) – Nandurbar (SC 69.28 per cent; female literacy 53.90 per cent)

PGI Grade 1: Karnataka (South) – Raichur (ST 19.03 per cent; SC 20.79 per cent; female literacy 49.56 per cent)

PGI Grade 2: Jharkhand (East) – Gumla (68.4 per cent; female literacy 56.97 per cent)

PGI Grade 3: Assam (North-east) – Udalguri (32.1 per cent; female literacy 59.17 per cent)

PGI Grade 4: Chhattisgarh (Central) – Dantewada (78.5 per cent; female literacy 32.88 per cent)

PGI Grade 5: Meghalaya (North-east): Ri Bhoi (100 per cent; female literacy 75.85 per cent)

In general, all the selected aspirational districts have a higher proportion of rural schools compared to both state and national (72 per cent) figures. Aspirational districts with a very high proportion of rural schools include Udalgiri in Assam (93 per cent), Gumla in Jharkhand (92 per cent), and Ri Bhoi in Meghalaya (96 per cent). In all cases, districts' proportion of government schools is higher than that of the respective states. Dantewada with 95 per cent government schools has by far the highest proportion. The ratio of government to private unaided and private aided schools varies widely between these districts. Ri Bhoi is distinctive with 53 per cent government schools, 22 per cent private unaided schools and 24 per cent aided schools, in comparison with the state's overall figures, where only 9 per cent schools are private unaided, and 8 per cent are private aided. Firozpur in Punjab has 22 per cent unaided schools compared to 9 per cent for the state of Punjab.

AVAILABILITY OF TEACHERS

Most of the aspirational districts have a *higher percentage of single-teacher schools compared to the state*. This is indicative of the challenges that the districts probably face with regard to staffing. This is also seen from *relatively higher PTRs* seen in almost all of the districts. In almost all cases, there are more schools with vacancies in the selected aspirational districts in comparison to the state as a whole.

The proportion of women teachers in the selected aspirational districts is far lower than the state and in comparison with the all-India figure of 50 per cent. Nandurbar with only 27 per cent women teachers and Udalguri with only 32 per cent are among the lowest. Only Gumla (44 per cent as opposed to 39 per cent for Jharkhand as a whole) and Ri Bhoi (61 per cent as opposed to 57 per cent for Meghalaya as a whole) are exceptions. While the all-India figure for graduate teachers is 80 per cent, the figures are far lower in all the aspirational districts, with Raichur lowest at 31 per cent. Districts where the percentage of graduate teachers is twenty or more points below the state figure are present in Chhattisgarh, Karnataka, Maharashtra and Punjab (90 per cent versus 60 per cent). Professional qualifications are generally commensurable with the figures of the state, with low overall levels of professionally qualified teachers in the states of Assam (49 per cent), Jharkhand (68 per cent), and Meghalaya (44 per cent).

WORKING CONDITIONS: BASIC AMENITIES

In terms of accessibility, schools in these aspirational districts compare well with the overall accessibility of schools in their respective states, with the exception of Gumla which has only 48 per cent of its schools accessible by road, as opposed to 66 per cent of all Jharkhand schools. In most of the aspirational districts, over 85 per cent of schools have functional drinking water except Gumla where the figure is 74 per cent compared to 89 per cent for the state, and Ri Bhoi – 23 per cent compared to 59 per cent for the state. *The selected aspirational districts fare poorly with respect to provisioning of functional boys' and girls' toilets* with only 49 per cent Dantewada schools having boys' toilets and only 57 per cent of Firozpur schools having girls' toilets. *Electricity provisioning is also at best at the level of the state (Udalguri at 32* per cent*), but is generally below the state level by about fifteen to twenty percentage points* (Firozpur has 100 per cent electricity). In general, the provision of basic amenities in aspirational districts is not adequate and is less than the state average level.

These factors could contribute to making the schools in the district difficult to staff with adequate teachers (as can be seen from the incidence of school vacancy), provisioning of women teachers and graduate teachers.

WORKING CONDITIONS: PROFESSIONAL

With regard to working conditions relating to professional aspects of teaching, there are no noticeable patterns pertaining to disadvantageous conditions. By and large, availability of library, proportion of schools with all classrooms in good condition and receipt of textbooks follows the overall state patterns. *Noticeably lower levels of provisioning is observed in the case of availability of laptops, ICT labs and Internet in schools in aspirational districts.* Visits by inspectors and academic supervisors are at the same level as the respective states, which are generally overall high all over India.

Source: CETE research team's calculations based on UDISE+ 2018/19 data.



Teacher-student interaction is central to quality teaching. Rajkiya Intermediate College, Uttarakhand, India.

Summary

Thirty per cent of the teacher workforce is in the private unaided sector, and about 50 per cent is in the government sector.

Teacher availability has improved, however PTRs are adverse in secondary schools and there is no information on the availability of special education, music, arts and physical education teachers. The extent of availability and deployment of subject teachers is also not known. Almost all single-teacher schools are in rural areas. The north-eastern states of India need special efforts to improve availability of qualified teachers and deployment.

Working conditions of teachers in the north-east and in the aspirational districts are poor from the point of view of basic amenities. Provision of school libraries is low, ICT infrastructure is very low, and there is marked rural-urban disparity.

The profession is overall gender balanced at about 50 per cent women. But some sectors – early childhood, special education and private unaided schools – are highly feminized. This may have to do with lower salaries, rendering teaching jobs as second incomes to be taken up by women. It is noticed that states high in PGI are also states with a high proportion of women teachers.

In about 15 years, 27 per cent of the current workforce will need to be replaced. The work force has a deficit of over 1 million teachers (at current student strength), and is likely to need to grow overall given the shortages of teachers in certain education levels and subjects such as early childhood education, special education, physical education, music, arts, and curricular streams of vocational education.



Teachers preparing their presentation during an online workshop. Ahlcon International School, Delhi, India.



CHAPTER 3

Status and terms of employment

This chapter examines various dimensions of the teaching profession including status of teachers, management, employment terms and remuneration, career management, accountability and job satisfaction. Differences in type of management (government versus private) and type of contract are found to be key.

3 Status and terms of employment

The status of the teaching profession presents widely contrasting pictures in terms of prestige and respect – both within the profession as well as in the eyes of the public and the media. The experience of teaching – including remuneration and rewards, management, personal satisfaction and motivation to teach – is highly diverse and varies with school setting, between management types and from state to state. The internal dynamics of these dimensions, as well as the contrast itself, can be understood only by recognizing the high proportion of private unaided schools as employers. The overall ratio of government to private school teachers (both primary and secondary) is about 10:7 (see Table 3.1). In other words, there are seven private school teachers for every ten government school teachers. The fairly large proportion within government teachers who are 'contractual' rather than 'regular', presents further complexity. The highly differentiated remuneration and management terms have a profound effect on the profession of teaching and teachers as professionals. Reforming, and monitoring the reform process, with regard to teachers has also become an important dimension of governance — 70 per cent of the governance metrics in the Performance Grading Index (PGI) are referenced to teachers (see Box 3.8).

TABLE 3.1
Ratio of government to private school teachers

	Government teachers	:	Private unaided school teachers	:	Government aided school teachers
Overall school (primary and secondary) (Unified District Information System for Education [UDISE])	10	:	7	:	1.8
Overall, including early childhood care and education (ECCE), school, vocational and special (Periodic Labour Force Survey[PLFS])	10	:	5.23		
ECCE (PLFS)	10	:	2.22		
Primary (PLFS)	10	:	5.40		
Secondary (PLFS)	10	:	7.1		

Source: CETE research team, based on data from Unified District Information System for Education (UDISE) 2018/19 and Periodic Labour Force Survey (PLFS) 2018/19. Figures for teachers working in aided schools could not be deciphered from PLFS.

Opposite page: Teachers are responsible for bringing out the best in their students. Ahlcon International School, Delhi, India.

Below: A teacher guides students through a chemistry experiment. Gurukul Vidya Niketan, Uttarakhand India.





Occupational status

> The high respect for teachers and the high status of the teaching profession must be restored so as to inspire the best to enter the teaching profession
>
> NEP 2020

What is the social standing of teachers? Are teachers trusted to deliver good education? Do the youth regard teaching as an aspirational profession? According to the 2015 Education International study, teacher status is linked to "socio-cultural and economic contexts, job security, salaries and working conditions, teachers' professional development, representation of teaching profession, professional autonomy, social dialogue and involvement in decision making". Culturally, teachers are held in high esteem in India, yet, the popular perception is that the status of teachers is low, and teachers are held in poor regard. The National Education Policy (NEP) 2020 asserts that 'the high respect for teachers and the high status of the teaching profession must be restored so as to inspire the best to enter the teaching profession.'

The subcontinent has a rich civilizational inheritance of indigenous pedagogical forms in which teachers are highly respected. Guru, *maulana*, *ustad*, *panda*, *baiga* are among the numerous terms for teacher in Indian languages and cultures, denoting a range of religious, esoteric and secular epistemic traditions and forms of expertise – from music, art and medicine, to religion and motorcycle maintenance (Sayed and Sarangapani, 2021: 1205). Teachers, seen in this mould in the public imagination, command respect from the community and from their students. They are figures of authority in the classroom, and regard autonomy as essential to their professional work. In contrast to this is the image and status of the teacher resulting from becoming a part of the school system. Kumar (2014) has argued that the perception of teachers as being servile and having low status is linked to their being placed at the lowest rung of a bureaucratic system, with low pay and no autonomy. A third image of the (government) teacher as derelict and immoral, overpaid but absentee, or underworked, has also taken shape alongside (Kale, 1970).

There is limited research on the occupational status of teachers in India. The Education International (2015) study on teacher status indicates that globally, the occupation has average status, with early childhood education (ECE) teachers placed much lower. The 2018 round of the Global Teacher Status Index, which included India, finds that globally, secondary teachers have an average status rank of 7 out of 14, with headteachers ranked higher at 8.1, and primary school teachers lower at 6.4. Overall, the perception of teacher status, both by the public and the teaching community, is lower in India than in China or Russia where teachers are deemed equivalent in status to doctors (see Table 3.2).

TABLE 3.2
Occupations perceived by the public and the teaching community as equivalent in status to teachers

Country	Sample: public	Sample: teachers only
Brazil	Librarian	Nurse
Russia	Doctor	Doctor
India	Librarian	Librarian
China	Doctor	Doctor

Source: Varkey Foundation, 2018, p. 45.

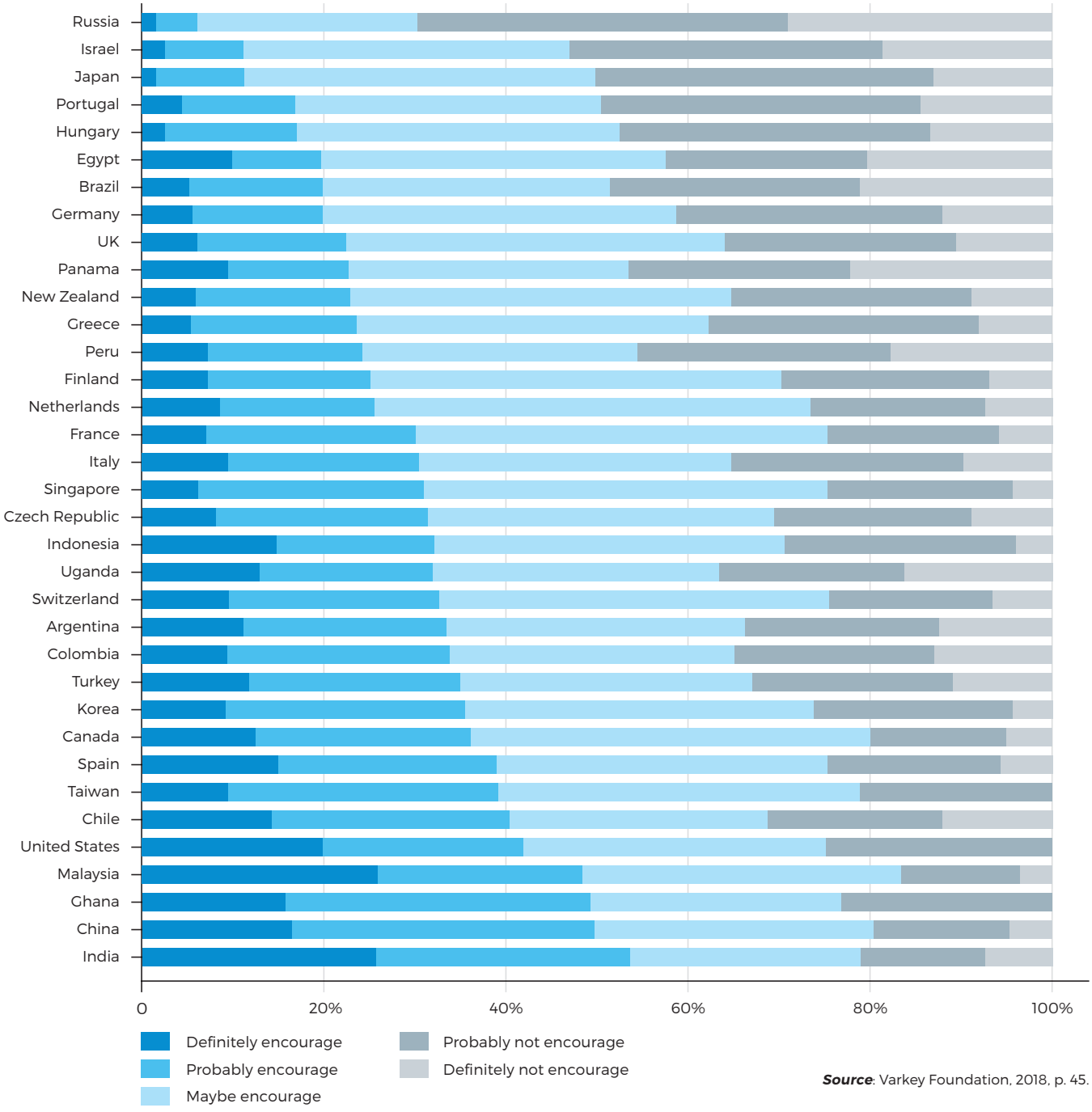
Occupational choice

There is a widely held perception that teaching is mostly not an occupation of choice and that this has implications for quality. However, women, as well as youth from rural areas and relatively underprivileged and lower socio-economic backgrounds, consider teaching to be a desirable occupation and often regard it as their first choice. In the case of women, many families

encourage this choice of career, citing convenient work timings, vacations and therefore the ability to manage home and work/career (Latha, 2020; Akai and Sarangapani, 2017). Women also cite not wanting promotions to school head positions or taking up roles as cluster or block resource centre coordinators, on account of increased travel and dealings with administration and community members (Government of India, 2011). Men, women and young adults enrolled in teacher education programmes along with beginner teachers, particularly from rural areas, cite being able to start work early – within two years of completing senior secondary school (for teaching positions in primary schools) – and the prospect of a government job, as important drivers. Alternative occupations that were under consideration included bus conductor or nurse (Latha, 2020). The 2018 Global Teacher Status Index (GTSI) also indicates that in the case of India, about 25 per cent of parents say they would definitely encourage their children to become teachers, and an equal percentage say they would probably encourage their children to become teachers (See Figure 3.1). This is among the highest globally.

FIGURE 3.1

Parent's views on whether they would encourage their child to become a teacher: by country



Source: Varkey Foundation, 2018, p. 45.



Above: Knowledge-sharing among teachers. Ahlcon International School, Delhi, India.

Contracts, salary and benefits

The nature of contracts on the basis of which teachers are employed has been a focal push-pull point in policy and practice, with comparisons made within categories of government-employed teachers, and between government and private school teachers. The compensation package involves both salary and benefits, while the type of contract refers to regular contracts as well as contracts valid for a fixed period of time. Contracts could be for full-time or part-time work, with the Right to Education (RTE) Act itself recognizing 'part-time' teachers in the areas of music, dance and physical education. Contractual appointments – especially in the private sector – frequently do not cover vacation periods. In higher education, paying teachers on an hourly basis for lectures is commonplace in cash-strapped government and self-financed private colleges. Incidences of such payment arrangements are now being observed in the school education sector, in the context of online classes conducted by teachers during the COVID-19 pandemic. The government sector has also adopted an 'outsourcing model' for assigning computer teachers in schools, where an agency is contracted to provide teachers. These teachers are on the rolls of the agency, and the government pays the agency for their service. This model is also followed in private schools who may use intermediary agencies through which teachers are provided, or they may contract a private firm to provide a complete curricular component, such as art education or physical education programmes. The models of teaching are undergoing change, driven by private sector enterprise. In this section, and in this report, we are unable to fully explore these dimensions and have restricted our analysis to full-time teachers only, and the contracts of regular wage employees in government and in private schools.

The nature of the contract has implications for cost, salary, annual increments, long-term liabilities such as pension and provident fund provision, as well as various benefits such as health insurance. It has implications on leave entitlements of employees, and legal protection against arbitrary employer action. The presence and growth of contractual appointments in the government sector is seen as an indication of casualization or de-professionalization, or resource shortages at the state governments' level leading to inability to pay salaries commensurable with regular appointment.

The type of contract potentially affects how 'autonomously' or with how much 'accountability' the teacher works. Some researchers argue in favour of short-term contracts where employers can dismiss an employee with notice if expectations are not met and quality is not delivered. These researchers are of the view that such contracts ensure higher work ethic among teachers and 'value for money' for the management. They argue that, although in principle it is possible, regular teachers are almost never dismissed for dereliction of duty in practice. Similar views are found in research that pretend that levels of efficiency and effectiveness are, or would be, higher among para teachers and private teachers. This view and its alternatives are examined in more detail in Chapter 4.

The following sections study the length and types of contracts that teachers enter into with their employing schools, as well as the salaries and additional benefits they receive.

The nature of the contract has implications for cost, salary, annual increments, long-term liabilities such as pension and provident fund ... as well as ... health insurance

The differences in contractual status, between government and private schools, and between different school levels and teacher types, are stark and wide

Length of contract

The Periodic Labour Force Survey (PLFS) data for 2018/19 finds that variations in contract lengths, remuneration levels and benefits are indicative of both job security / insecurity and vulnerability of specific groups of teachers. Table 3.3, for example, shows that 73 per cent of special educators employed in private schools work with no contract, and draw an average monthly salary of 3,148 Indian rupees (INR); the remaining 27 per cent who have longer contracts, draw an average monthly salary of INR 4,000.

While 95 per cent teachers report themselves as employed and salaried (as opposed to being tutors or self-employed), only 45 per cent teachers overall report having contracts of three years or more. 42 per cent teachers report having no contracts, and 8 per cent have contracts spanning between one and two years. Special education teachers are among the worst off, with only 19 per cent reporting contracts longer than three years' duration, and 77 per cent reporting that they work with no contracts.

The differences in contractual status, between government and private schools, and between different school levels and teacher types, are stark and wide.

In the government sector, the overall number of school teachers with contracts of more than three years' duration is a high 67 per cent. However, 28 per cent of primary and secondary school teachers are found to be working with no contract. In the early childhood education sector, only 49 per cent teachers report having contracts of longer duration than three years, while 35 per cent report having no contracts. In the special education sector, only 13 per cent report having contracts of more than 3 years' duration, and 80 per cent have no contracts.

The overall proportion of teachers in private schools who report working with no job contract is alarmingly high at 69 per cent. The proportion of teachers working without contracts is 58 per cent in the case of early childhood teachers, and about 70 per cent or higher for all others – 71 per cent for primary teachers, 69 per cent for secondary teachers, 73 per cent for special education teachers and 74 per cent for vocational education teachers. The proportion of teachers who report having contracts of three years' duration or longer – that is those who may be considered as equivalent to regular teachers – is 29 per cent for early childhood care and education (ECCE) teachers, 16 per cent and 17 per cent respectively for primary and secondary school teachers, and 31 per cent overall. The absence of contracts exempts the management and employers from any accountability towards the teachers they employ.



TABLE 3.3
Comparison of contract types

	Early childhood education	Primary school	General secondary school	Special education	Vocational education (sec.)	All school teachers (primary and gen. sec.)	All teachers
Type of contract for regular salary/wage earners (all salary figures in INR)							
Proportion with no job contract	39%	44%	43%	77%	43%	44%	43%
Proportion with 1-year contract	7%	4%	6%	4%	7%	5%	5%
Proportion with 1 to 3 year contract	9%	3%	4%	0%	10%	3%	4%
Proportion with > 3 year contract	45%	48%	47%	19%	41%	48%	47%
Average salary/wage: no contract	7,477	17,414	19,628	16,251	16,611	18,531	16,656
Average salary/wage: less than 1 year contract	6,859	8,837	10,222	6,000	15,570	9,633	8,984
Average salary/wage: 1 to 3 year contract	7,739	15,627	21,348		11,292	18,991	14,799
Average salary/wage: > 3 year contract	11,650	28,057	35,890	11,246	35,128	31,982	28,323
Type of contract for regular salary/wage earners in government enterprises							
No job contract	35%	30%	26%	80%	13%	28%	29%
1-year job contract	7%	3%	4%	8%	6%	3%	4%
1 to 3 year contract	10%	2%	2%		19%	2%	4%
> 3 year contract	49%	66%	68%	13%	63%	67%	62%
Average salary/wage: no contract	7,741	28,135	32,285	26,954	35,000	29,986	23,904
Average salary/wage: less than 1 year contract	6,525	7,983	10,686	6,000	24,000	9,660	8,573
Average salary/wage: 1 to 3 year contract	7,833	20,467	31,935		11,292	26,182	15,051
Average salary/wage: > 3 year contract	11,353	28,872	37,490	24,726	38,209	33,099	29,137
Type of contract for regular salary/wage earners in non-government/private enterprises							
No job contract	58%	71%	69%	73%	74%	70%	69%
1-year job contract	10%	8%	7%		7%	8%	8%
1 to 3 year contract	3%	5%	7%			6%	5%
> 3 year job contract	29%	16%	17%	27%	19%	17%	18%
Average salary/wage: no job contract	6,757	8,990	12,872	3,148	13,497	11,096	10,733
Average salary/wage: less than 1 year contract	7,927	9,359	9,828		9,251	9,612	9,410
Average salary/wage: 1 to 3 year contract	6,235	11,794	16,642			14,892	14,449
Average salary/wage: > 3 year contract	13,931	21,791	26,925	4,000	25,000	24,714	22,915

Source: CETE research team, based on PLFS 2018/19 data.

Opposite page: Even outside class, teachers put in a lot of effort to improve the learning outcomes of students. Composite School, Hoshiyarpur, Uttar Pradesh, India.

BOX 3.1

Are private school teachers more 'accountable' than government school teachers?

Non-academic activities accounted for 20 per cent to 25 per cent of weekly working hours. While government teachers reported working more hours in school than private school teachers, non-academic activities took up most of their time. (Sankar and Linden, 2014)

In budget private schools with a very low fee base, teachers' salaries too were very low, and varied from month to month depending on fee collection. In these schools, the management found that they could not hold teachers to expectations, and gave them much greater leeway, adjusting to their coming late or leaving early. Women teachers were found willingly working for low salaries in schools where they could take leave whenever they needed – mostly to address the needs of their families – having established a rapport with the head. According to the teachers, the management in better-paying schools tended to be more particular, and it would not be possible for teachers to benefit from such considerations. On visits to small and 'budget' private schools, one usually found an adult in the classroom, but it was not easy to establish if this person was an appointed school teacher. A common sight every morning in private schools was an administrator handling phone calls from teachers calling in sick, and needing to arrange for substitutes to mind the children. It therefore does not appear therefore that there is less teachers absenteeism in private schools. (Sarangapani, 2018; Jain, 2018)

Source: as cited.



Non-academic activities accounted for 20 to 25 per cent of weekly working hours

Salary/wage

Teacher salary is a key – although not the only – factor in the success of high performing systems. A profession loses prestige and consequently the ability to attract talent when salaries are not commensurate with the level of education and the extent of responsibilities, or adequate for a decent life. Teachers are among the lowest paid public professionals, but their salaries account for almost 90 per cent of the recurring budget in almost all states. This large proportion is usually noted with alarm – however it is salutary to recall that teachers are the key resource in education/schooling and the salary bill proportion is matches the global trend in both developing and developed countries (Jha et al., 2021: 1225). Teachers' wages have been an important policy and lobbying point, and comparisons between contracted and 'regular' teachers within government schools, as well as between government and private school teachers is commonplace. Arguably, in the context of a middle-income country such as India, and in private unaided schools where salaries are funded from fee collections, cost-effectiveness is an important consideration. Government data on salaries is accessible, but data on private school salaries is extremely difficult to come by and there is almost no research on this. However, PLFS 2018/19 provides data to examine teachers' salaries both in absolute terms, and to make comparisons between government and private sectors, and between teaching levels/types of teachers (see Table 3.4).

Above: Government school teachers have to engage in a lot more non-academic activity, like mid-day meal distribution. As seen in this government school in Puducherry, India.

TABLE 3.4

Comparison of average pay of regular salary/wage earners in government versus private/non-government schools (in INR)

Type of school	Monthly average household consumption expenditure (a)	Government schools		Non-government/private schools				Earning of privately employed as proportion of government employee (e) / (c)
		Proportion employed (b)	Average monthly salary/ wage (c)	Proportion employed (d)	Average monthly salary/ wage			
					All (e)	Rural	Women teachers, rural	
Early childhood education	10,126	81%	9,440	18%	8,946	8,410	8,090	95%
Primary school	14,082	63%	27,958	34%	11,257	10,455	7,658	40%
General secondary School	16,195	55%	34,839	39%	15,425	12,541	9,012	44%
Special education	16,101	53%	25,035	47%	3,375	–	–	13%
Vocational education (secondary)	19,185	49%	31,849	50%	15,345	6,241	–	48%
All school teachers (primary and gen. sec.)	15,171	59%	31,280	36%	13,564	11,584	8,212	43%
All teachers	14,276	63%	26,183	33%	13,099	11,214	8,126	50%
Pay gap between highest and lowest paid teachers across industry types			25,399		12,050	6,300	1,354	

Source: CETE research team, based on PLFS 2018/19 data.



Private school teachers earn only about 43% of what a government school teacher does at the primary and general secondary school levels

ECE teachers are the lowest paid, both in government and private schools (INR 9,440 and INR 8,946 respectively), followed by primary school teachers (INR 27,958 and INR 11,257 respectively), followed by general secondary school teachers (INR 34,839 and INR 15,425 respectively). Also, while ECE teachers are paid almost the same in the two sectors, private school teachers earn only about 43 per cent of what a government school teacher does at the primary and general secondary school levels. In the government sector, special education teachers are paid about as much as primary school teachers, while vocational education teachers are paid at the level of secondary school teachers. But special education teachers in the private sector are paid only about 13 per cent of their counterparts in government sector. Overall, the gap between the highest and lowest paid teacher categories is wider in the government sector, amounting to a difference of INR 25,399 between the average earnings of secondary school teachers and ECE teachers. In comparison, the difference in the private school sector is about INR 12,050 between the average earnings of general secondary school teachers special education teachers.

The average salary of private school teachers (primary and secondary) is INR 13,564. Rural private school teachers earn less at INR 11,584 and women private teachers in rural schools make only INR 8,212. Comparing average salaries to the average monthly household consumption expenditure – INR 14,276 for all teachers – only the salaries of secondary and vocational education teachers is commensurable among those employed in the private sector. In all other cases, it is likely that the teacher's income needs to be supplemented by other means and the salaries of women employed in private schools are a secondary income source in the family.

In the case of government-employed teachers, the salary differential between those without and with contracts is not very high, (INR 29,986 versus INR 33,099, see Table 3.3). However, in the case of teachers working in private schools, there is a significant difference in the salaries of teachers in the two groups. An ECE teacher with no contract receives 48 per cent of the salary of a teacher with a three-year contract (INR 6,757 versus INR 13,931, see Table 3.3). A teacher at a primary and general secondary school with no contract receives only 44 per cent of the salary of a teacher with a three-year contract (INR 11,096 versus INR 24,714, see Table 3.3).

The distribution of salaries for both government and non-government/privately employed teachers in primary and secondary schools shows considerable range.



The variation in government school teacher salaries (both primary and secondary school teachers) is largely explained by years of service. In the case of teachers in the private sector, it is both years of service as well as the fee collected, along with negotiation by teachers in an individual capacity. As seen in Table 3.4, teachers in rural areas and women teachers have salaries that are far lower than average, indicating that their urban and male counterparts earn far more than them. The overall feminization of teaching in the private school sector needs to be also seen in relation to the economics of private unaided schools, where teachers are paid much less (also note that the wages are lower than the monthly average household consumption expenditure, suggesting that this is likely to be a second income).

Left: A school principal interviews a teacher applicant. Rajkiya Intermediate College, Uttarakhand, India.

BOX 3.2

2018 Global Teacher Status Index (GTSI): selected main findings

Relative to other professional graduate occupations, teachers do not enjoy very high status and are not paid very well. Unquestionably, a part of their low relative status is due to the fact that they are paid modestly in most countries. Headteachers are accorded higher respect than secondary teachers who in turn are accorded more respect than primary teachers. All teachers do not compare well with to doctors and lawyers.

Unquestionably, in terms of public perception, if a job is highly paid it is also very likely to be one that is accorded high respect. However, when the data is aggregated to the country level there does not seem to be an overall positive relationship between these two composite indicators. In other words, actual teacher pay and average status score at the country level, are not correlated. But this does not mean that respect and pay are not associated in the individual data.

Cultural factors play a huge role in the relative standing of teachers in different countries. Most notably in China, Russia and Malaysia, teachers are thought to be most similar to doctors as a professional occupation.

By and large, teachers are not paid what the public thinks they ought to be paid as a 'fair' wage. The public also systematically underestimates the actual working hours that go into a teaching job. Varkey Foundation data, when merged with that of the Programme for International Student Assessment (PISA), continues to suggest that there is a clear and systematic relationship between how much a teacher is paid in a country and the PISA pupil performance in that country. A slightly weaker, but nonetheless clear relationship is evident between GTSI 2018 and PISA student performance. The relationship is clearest when the effect of both teacher pay and teacher status on pupil outcomes is considered.

These findings have clear implications for governments as it is evident that paying teachers more in relative terms gives rise to better student performance, as logically, better pay acts as a device to recruit more able graduates into the profession.

Hence governments cannot expect to attract the most able graduates into the teaching profession very easily when their wages are low on the presumption that they have high relative status. Rather, governments should seek to improve both the pay and status of teachers in order to effect an improvement in pupils' academic achievement.

In conclusion, this research replicates and extends the initial analysis from 2013 showing that teacher status is a necessary consideration for governments around the world. Status is not just a nice thing to have, but something that can be a direct contributor to improved student performance, via an increased likelihood of more effective teachers entering the profession and remaining in the profession. Whilst status is already high in some countries, it remains a mid-ranked profession in many, and therefore presents a real and present challenge to governments as they seek to improve the capacity of the teaching profession.

Source: Varkey Foundation, 2018, pp. 124–125.



61 per cent of primary school teachers and 57 per cent of ECE teachers employed in the private sector receive very low salaries

Benefits

Pension, provident fund (PF), gratuity, health insurance and leave policy – especially maternity and childcare leave – constitute key benefits that, along with pay/salary, make the profession secure and enable fair compensation.

PLFS 2018/19 data reveals that in the private sector, 59 per cent of teachers were ineligible for benefits, and only 11 per cent received the maximum allowable benefits, i.e. PF/pension, gratuity, healthcare and maternity leave. In contrast, in the government sector, only 19 per cent of teachers were found ineligible, and 41 per cent received maximum allowable benefits.

Among ECE teachers in the government sector, 49 per cent were ineligible, 9 per cent received only healthcare and maternity benefits, and only 15 per cent received maximum allowable benefits. 22 per cent of those employed in the government sector and 11 per cent of those employed in the private sector received PF/pension.

This suggests that teachers employed in the private sector, and ECE teachers in both sectors, were highly vulnerable. Overall, only 49 per cent primary and secondary school teachers, 43 per cent vocational education teachers and 39 per cent special education teachers in government schools received employment benefits. Additionally, in non-government/private schools, 40 per cent of special education teachers received benefits in the form of PF, and 22 per cent of vocational educators received full benefits of PF/pension, gratuity, healthcare and maternity (see Table 3.5).

Research shows that regular teachers in government schools have far greater access to many types of leave (Kalra, 2019). However, more than leave, women teachers need flexibility in order to juggle home and work. In the absence of any policy on these matters, such flexibilities are dependent on completely discretionary arrangements between the heads of schools and the teachers. Private school teachers are able to arrive at arrangements through personal negotiations. Teachers in private schools, especially women, cite concessions – such as the flexibility to come in late or leave early when needed, or to work part-time – that help balance the demands of home and workplace, as their reason for settling for less pay (Parul, 2019; Latha, 2020; Sarangapani, 2018).

PLFS 2018/19 data on teacher salaries and social benefits reveals that 61 per cent of primary school teachers and 57 per cent of ECE teachers employed in the private sector receive very low salaries (INR 7,286 and INR 6,546 respectively), are entitled to no benefits, and therefore count among the most vulnerable. Additionally, 50 per cent of government teachers, and only 16 per cent of private sector teachers have some form of health coverage. Among ECE teachers, the figures are 28 per cent and 10 per cent respectively in the government and private sectors. In the current context of the COVID-19 pandemic, when reopening schools and returning children without delay to in-person, face-to-face education is an urgent need, it is vital to ensure health coverage for all teachers across government and private sectors, especially ECE workers who work in communities and face most exposure.

TABLE 3.5

Industry-wise comparison of proportion of various social benefit package recipients among government and non-government/private enterprises

Social benefit package	Early childhood education		Primary education		General secondary education		Special education		Vocational education		All school teachers		All teachers	
	Govt.	NG/P	Govt.	NG/P	Govt.	NG/P	Govt.	NG/P	Govt.	NG/P	Govt.	NG/P	Govt.	NG/P
Proportion with PF/ pension, gratuity, healthcare and maternity benefits	15%	7%	47%	10%	51%	12%	39%	0%	43%	22%	49%	11%	41%	11%
Proportion with only PF/ pension, healthcare and maternity benefits	3%	1%	6%	3%	7%	3%	8%	0%	7%	0%	6%	3%	5%	3%
Proportion with only PF/ pension and gratuity	3%	2%	3%	4%	4%	3%	0%	0%	13%	0%	4%	3%	4%	3%
Proportion with only PF/ pension	11%	9%	26%	8%	24%	14%	29%	40%	23%	0%	25%	11%	22%	11%
Proportion with only gratuity, and healthcare and maternity benefits	1%	1%	2%	3%	1%	1%	0%	0%	0%	14%	2%	2%	1%	2%
Proportion with only gratuity	2%	7%	0%	2%	0%	1%	0%	0%	1%	0%	0%	1%	1%	2%
Proportion with only healthcare and maternity benefits	9%	0%	1%	0%	1%	1%	0%	0%	0%	0%	1%	0%	3%	0%
Not eligible	49%	57%	10%	61%	10%	57%	21%	60%	14%	64%	10%	59%	19%	59%
Not known	8%	15%	5%	9%	1%	8%	3%	0%	0%	0%	3%	8%	4%	9%

Source: CETE research team, based on PLFS 2018/19 data.



Recruitment and employment terms

Above: A panel of senior teachers conducting teacher recruitment. RKJ.S.N.S.N.M. Inter College, Uttarakhand, India.

Teacher recruitment in the government schooling system is a state subject, and generally takes place at state, region, district or block levels. The government school teaching job is sought after and is one of the few areas in which state recruitment continues to be relatively high. At the national level, recruitment of teachers is carried out by societies such as the Kendriya Vidyalaya Sangathan or the Jawahar Navodaya Vidyalaya Samiti which have schools all over the country to which teachers are posted. By and large, private schools recruit at the school level. Most research is limited to the government school sector, where recruitment practices are publicly documented and data is available. Little has been documented on the practices followed in private schools. Retention in the profession is an issue in many parts of the world. However, this has not emerged as an issue in the Indian context.

The three key considerations are type of contracts, whether recruitments are direct or indirect, and the process adopted.

1. **Type of contracts/ form of employment – regular and contractual**
2. **Nature of recruitment – direct or indirect**
3. **Process of recruitment**

1 Type of contracts/ form of employment – regular and contractual

Regular teachers are those who have the benefits of regular employment including increments, leave, pension, gratuity and others. Contractual teachers are those whose employment is for a fixed time period, may either follow a 'scale' or involve consolidated pay, and may not carry any benefits. The growth of contractual teachers within the government school system is a feature of the last three decades. Contractual employment is also found in private schools. Contractual terms may also be for full-time or part-time teaching.

2 Nature of recruitment – direct versus indirect, centralized versus decentralized

Direct recruitment involves new recruits entering the system. Indirect recruitment may involve promotion of teachers already within the system, regularization of contractually employed teachers, or, in some cases, extension of employment under compassionate grounds. A related consideration is whether it is

centralized – at the state or district level – or decentralized at the school level. The teachers may also be outsourced, or in other words, employed by contracting a firm that recruits the teachers.

Overall in the last decade, direct recruitment for regular teaching jobs in the government education sector has been limited (Ramachandran et al., 2018). This has led to persistently high pupil teacher ratios (PTRs), a rise in contractually employed teachers in government schools, persistent teacher vacancies, and the non-availability of subject teachers in middle and secondary/senior secondary schools.

There are several reasons cited for this. Poor fiscal condition of the states leading to their inability to fill sanctioned posts, recruitment processes held up in court litigation, lack of proactive efforts by state governments to fast-track appointment processes, and apathy (Ramachandran et al., 2018).

Table 3.6 shows the significant variations in the proportion of direct and indirect recruitment from state to state. In Karnataka, 50 per cent of the recruitment is direct. In Mizoram, 100 per cent of the recruitments are direct, but currently only contract teachers are hired and inter-cadre promotions (from primary or middle school to secondary schools) are disallowed. In Odisha, all recruitment is indirect, conducted via promotions and regularization of the existing contract teachers. States such as Jharkhand, Madhya Pradesh, Odisha and Punjab have been hiring only contract teachers. On the other hand, Rajasthan, which was among the first states to hire contract teachers has stopped this practice after a 2013 High Court order (Ramachandran et al., 2018).



Overall in the last decade, direct recruitment for regular teaching jobs in the government education sector has been limited

TABLE 3.6
Recruitment practices in selected states

States	Direct recruitment (regular)	Indirect recruitment	Direct recruitment (contract)
Karnataka	50%	50% via promotions	
Mizoram	–	Not allowed	100%
Odisha	–	Promotions and regularization of contract teachers	100% (regularized after 6 years)
Rajasthan	100% for elementary school; 50% for classes 9 and 10	50% for classes 9 and 10	
Madhya Pradesh	–	Promotions and regularization of contract teachers	100% (regularized after 3 years)
Punjab	–	–	100% (initially 1.5-year contract, followed by 3-year contract, and then regularized; however, policies change every year)
Uttar Pradesh	100% for primary; 50% in upper primary since 2013 (no direct recruitment for upper primary until 2013); 100% in aided schools; no policy for secondary, changes every year	50% upper primary	Only in information technology and vocational education in secondary; gradual phasing out of contract teachers
Tamil Nadu	100% in primary; 50% in upper primary	Based on promotions, and In some cases, a qualifying exam	Part-time teachers for art and physical education
Jharkhand	–	50% via regularization of contract teachers; about 25% of subject teachers in high school recruited from primary and middle schools	100% of primary teachers and about 70% of high school subject teachers

Source: CETE research team's data compilation based on Ramachandran et al., 2018.

In subjects such as information and communications technology (ICT), several states followed a 'Build, Own, Operate and Transfer' (BOOT) model, in which teachers for ICT labs were 'outsourced' and supplied by contractors. There is a growing trend to regularize existing contract teachers, given the widespread dissatisfaction among them and several strikes.

3 Process of recruitment

The key things to consider are whether the estimation of need is evidence-based, the process transparent and merit-based; whether it is designed to ensure that various demographic groups are represented and the needs of difficult-to-staff schools are met.

Teaching is one of the widely available and regularly advertised government jobs, and non-transparency in its recruitment mechanisms – involving graft – has been a recognized problem in several states in India. The need for timely recruitment – to fill vacancies and achieve acceptable levels of PTR – and a process to enable considerations of merit, social representation, and transparency have emerged as significant areas for sectoral governance reforms.

Most regular teacher recruitment in government schools is carried out centrally in the state, by the education commissioner or education department. The recruitment of elementary school teachers is managed by the Panchayat Raj ministry or department of local bodies in the states of Madhya Pradesh, Rajasthan and Punjab. The Government of India has mandated a reservation policy to ensure representation of teachers from scheduled caste communities, scheduled tribes, and other backward castes and persons with disabilities.

Direct recruitment of government teachers is by and large merit-based and takes into account the academic performance of applicants in their schools/colleges, and their state Teacher Eligibility Test (TET) results. Some states such as Karnataka also include, in addition, a state-level entrance examination (see Case study 3). However, rules have been known to change from year to year in states such as Uttar Pradesh and Jharkhand, suggesting political influences. In some states, when the TET was adopted, and a very small percentage of applicants were able to qualify, the rules were altered on an ad hoc basis, and eligibility standards were lowered. A systematic, technology-based, transparent system of recruitment, employment and transfer is found in two states – Karnataka and Tamil Nadu (Ramachandran et al., 2018).

School leaders play a vital role in improving the quality of education. There is a visible policy push to recruit headteachers on the basis of merit rather than promotion and seniority. Only six states and union territories (Gujarat, Himachal Pradesh and Rajasthan among the large states, Meghalaya among the small states, and the union territories of Sikkim and Chandigarh) had recruited head teachers based on merit in 2016/17 (Niti Ayog, *School Education Quality Index (SEQI)*, 2019).

Data on availability and recruitment of teachers for areas of the curriculum such as art and craft, physical education, music, and recruitment of teachers for early childhood education and vocational education is neither available nor systematized and examined in the system. It is speculated that such teachers, where available, are appointed contractually or part-time. At this point, the absence of data itself can be taken as an indication of the dire need for attention on these teachers .

Below: Music helps foster a positive mindset and can improve the concentration of a child. Gurukul Vidya Niketan, Uttarakhand, India.



It is speculated that recruitment of teachers for art and craft, physical education, music. early childhood education and vocational education are done contractually or on a part-time basis

CASE STUDY 3

Teacher recruitment system in Karnataka



Vacancies are identified based on a 40:1 PTR standard

In Karnataka, the recruitment process of teachers is fully automated and merit-based.

IDENTIFICATION OF VACANCIES

Vacancies are identified at the block level for each school based on a 40:1 PTR standard. The vacancy list is consolidated at the district level first, and a state-level vacancy list is prepared next. At the state level, the Office of the Commissioner of Public Instruction decides on the number of posts to sanction in consultation with the finance department, the Department of Primary and Secondary Education, and the chief minister. The number of sanctioned posts is often less than the demand.

APPLICATION PROCESS

All applicants have to submit their applications online. The eligibility criteria are a twelfth standard school completion certificate with a Diploma in Education (D.Ed.) for elementary teachers, and a bachelors degree in Education (B.Ed). Eligible candidates have to obtain a TET qualification conducted in the district (minimum marks – general category 60 per cent; SC/ST and OBC 55 per cent; former soldiers 50 per cent), and clear the state-level centralized test thereafter to be considered for recruitment.

SELECTION AND APPOINTMENT PROCESS

Candidates are selected based on academic performance, TET and centralized test performance, and on meeting the social category, sex, and individual characteristics reservation criteria. [Social category-wise reservation – SC 15 per cent, ST 3 per cent, OBC 32 per cent, general 32 per cent; sex-based reservation – female 50 per cent, male 50 per cent; individual characteristics-wise reservation – rural 25 per cent, ex-soldier 10 per cent, physically handicapped 5 per cent, unsheltered 5 per cent, Kannada-medium 5 per cent, remaining 50 per cent] All these percentages need to be fulfilled in the overall selection of candidates. Additionally from 2013, an 80 per cent domicile/local reservation criteria has been applied only for the Gulbarga division.

In the counselling process, meritorious candidates are allowed to select the blocks in which they want to work based on vacancies, through a computer application. SC, ST and OBC social-category candidates are given first preference. This process takes the longest as all the documents of the candidates have to be verified.

Source: Ramachandran et al., 2018.

Reform in teacher recruitment

The RTE Act and the national comparison and ranking dashboards – most recently the PGI – have been the two major means with which the central government has driven teacher recruitment reforms aimed at ensuring teacher quality and securing adequate teachers in the system.

The RTE Act has empowered the National Council for Teacher Education (NCTE) to determine teacher qualification. Grades 1 to 5 require senior secondary school completion and a minimum of a 2-year Diploma in Elementary Education (D.El.Ed.) or equivalent. Subject teachers from grade 6 onwards require a B.Ed. with an undergraduate degree in a school subject (for secondary school) and a postgraduate degree in a school subject (for senior secondary school). It is further mandated that teachers must also pass the Teacher Eligibility Test conducted by the centre or the state, for the level they teach in. These guidelines have been in effect since 2011.

States and union territories that have a transparent online, merit-based system of recruiting and deploying teachers and recruiting school heads include the union territories of Andaman and Nicobar islands, Delhi, Jammu and Kashmir, and Puducherry, and the larger states of Gujarat, Karnataka, Odisha, Punjab, Rajasthan, Tamil Nadu and West Bengal. Fourteen states are yet to develop systems of transparent, merit-based teacher selection, seventeen are yet to develop systems of online teacher transfer, and as many as twenty states still do not have systems of merit-based appointments of headteachers and principals of schools.

As indicated by the large number of states that have not yet been able to institute transparent mechanisms for teacher transfer as well as headteacher recruitment, these are areas in which political will need to be garnered, and there will be a need for engagement and negotiation with teacher unions, and perhaps also greater formalization of career pathways in relation to continuing professional development (CPD) for teachers. NEP 2020 articulates the government's intent to improve quality, representation of rural youth in the profession, and meeting staffing needs of schools (see Box 3.3).

BOX 3.3

NEP 2020 recommendations on recruitment of teachers

The NEP 2020 proposes many systemic reforms aimed at making the teacher recruitment process in schools more transparent by halting mass transfers, automating the transfer process through a computerized system, and requiring all states to execute a technology-enabled planning and forecasting exercise to determine vacancies by subject.

The policy promotes the idea of recruiting teachers and hiring local experts to a school complex and sharing them across the cluster of schools to deal with teacher shortages, particularly in physical, art and vocational education, counsellors, and technical staff.

In order to be recruited in government and private schools, teachers must have a professional degree and qualify through TET. The policy recommends strengthening the TET and also including evaluation of subject knowledge and teaching competencies through demonstrations and interviews.

Incentives will be provided for teachers to take up teaching jobs in rural areas, especially in difficult-to-staff schools through provisioning of local housing near or on the school premises, or increased housing allowances. Merit-based scholarships will be provided for rural students and teachers with knowledge of the local language to encourage local candidates to take up rural teaching jobs within their districts.

Source: NEP 2020.

TABLE 3.7

Indicators pertaining to teacher recruitment reform in Performance Grading Index (PGI)*, **2020**

Indicators pertaining to teacher recruitment	Max score	Number of states scoring > 90%	States/UTs scoring 20% or less
% of single-teacher primary schools	10	29	
% of elementary schools having PTR as per the RTE Act norm	10	27	Karnataka Bihar Jammu and Kashmir
% of primary and upper primary schools meeting head teacher norms as per the RTE Act	10	21	Andhra Pradesh
% of secondary schools having principals/ headmasters in position	20	24	Delhi
% of upper primary schools meeting norms of subject-teacher as per the RTE Act	10	20	Assam, Chhattisgarh, Ladakh, Madhya Pradesh
Number of new teachers recruited through a transparent online recruitment system as a % of total number of new teachers recruited in the given year	20	27	Assam, Ladakh
Number of teachers transferred through a transparent online system as a % of total number of teachers transferred	20	21	Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Bihar, Chhattisgarh, Goa, Himachal Pradesh, Ladakh, Madhya Pradesh, Lakshadweep, Telangana, Uttarakhand
Number of head teachers/ principals recruited through a merit-based selection system as a % of total number of head teachers/ principals recruited in the given year	20	17	Andhra Pradesh, Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Bihar, Chhattisgarh, Daman and Diu, Kerala, Goa, Himachal Pradesh, Ladakh, Madhya Pradesh, Lakshadweep, Telangana, Uttarakhand, Sikkim, Tripura, Uttar Pradesh
	120	i.e. ⅓ of governance-related score	

Sources: UDISE+, https://pgi.udiseplus.gov.in/#/home; https://pgi.udiseplus.gov.in/PGI-State-2019-20-Brochure.pdf (accessed 30 September 2021).

*For a comprehensive note on the PGI, see Box 3.8

*The Performance Grading Index has several metrics pertaining to reforming the teacher recruitment process, highlighting aspects of reform required and drawing attention to what states have achieved or need to achieve.



Above: An active classroom bursting with ideas. Composite School, Hoshiyarpur, Uttar Pradesh, India.

Deployment

Teacher deployment is primarily a concern of government schools and centralized systems of teacher recruitment and teacher management. It is mainly to do with 'regular' appointee teachers, and not contractual teachers. Deployment is not a concern of the 30 per cent of teachers working in private schools, or the 11 per cent of teachers in government aided schools. Deployment aims to ensure that schools have adequate teachers – to both maintain the desirable level of PTR as well as ensure that there are teachers for all the subjects that need to be taught. Additionally, deployment is also essential to ensure that head teachers are posted, and that vacancies created are filled in a timely manner. Specific efforts are needed to ensure adequate staffing in order to address insufficient recruitment of teachers, especially in some subject areas, and in difficult-to-staff schools because of their geographical location. Their remoteness or lack of basic facilities leads to conflict with the teachers' personal lives, and their right to a personal life.

Hence teacher deployment needs to address the following.

- Initial posting of teachers to schools
- Timely movement of teachers in order to achieve teacher numbers in compliance with PTR norms and to ensure adequate subject teachers
- Transparency in transfers
- Special efforts to ensure staffing of difficult-to-staff schools – either in the form of policy or incentivization through pay and benefits

Deployment/transfers, as much as recruitment, are therefore key areas of interest of multiple stakeholders and players in the system. They have been subject to significant political control and involvement as well as graft. It is also therefore an area resistant to reform and improved transparency. These features and aspects are both 'common-sense knowledge' in the sector and also documented in research (Ramachandran et al., 2018; Béteille, 2009).

Initial deployment of teachers in most Indian states is determined by the cadre to which the teacher is recruited through the relevant appointment process adopted, at the state or division or district or block level. The involvement of schools is limited to providing information pertaining to teacher requirements and vacancies – they are not involved in selecting teachers.



Reasons for which transfer may be sought include disability, medical reasons and personal reasons such as marriage

Above: A dance teacher teaches the *Dandiya*, a traditional dance form from Gujarat. RKJ.S.N.S.N.M. Inter College, Uttarakhand, India.

Opposite page: An English teacher narrates a story. RKJ.S.N.S.N.M. Inter College, Uttarakhand, India.

In Karnataka, after the initial merit list is prepared, teachers can choose the school of their posting, based on information maintained on available vacancies. Elementary school teachers in many states are a block-level cadre. Being transferred out of the block, after the initial posting, entails loss of seniority. Secondary school teachers are usually a divisional cadre (for example in Karnataka) or state-level cadre (most states). There are no teachers who belong to a school cadre (and cannot be transferred). In Karnataka and Tamil Nadu, teachers can choose the block in which they wish to be posted for teaching, based on a merit list and involving online transparent management. All regular secondary school teachers in Jharkhand and all teachers in Mizoram belong to the state cadre and can be appointed and transferred anywhere in the state (Ramachandran et al., 2018).

Transfers take place for various reasons and may be initiated by teachers themselves as well as their management. As in the case of deployment, they are largely applicable to government school teachers with regular rather than contractual employment. In states where contractual employment may be the first phase in the process of becoming a regular teacher (for example Madhya Pradesh), transfers do not take place during the contractual period.

Transfers may be initiated by the system for administrative reasons, such as to fill vacancies, rationalize PTR and school consolidation, and also for disciplinary reasons. Rules governing transfers which are initiated by teachers vary. In general, eligibility to initiate a transfer request depends on the length of service and type of cadre. Reasons for which transfer may be sought include disability, medical reasons and personal reasons such as marriage. Mutual transfer between two teachers wishing to exchange their postings is sometimes also allowed. These provisions and rules recognize the teachers' right to family life, and may also serve as informal 'rewards'.

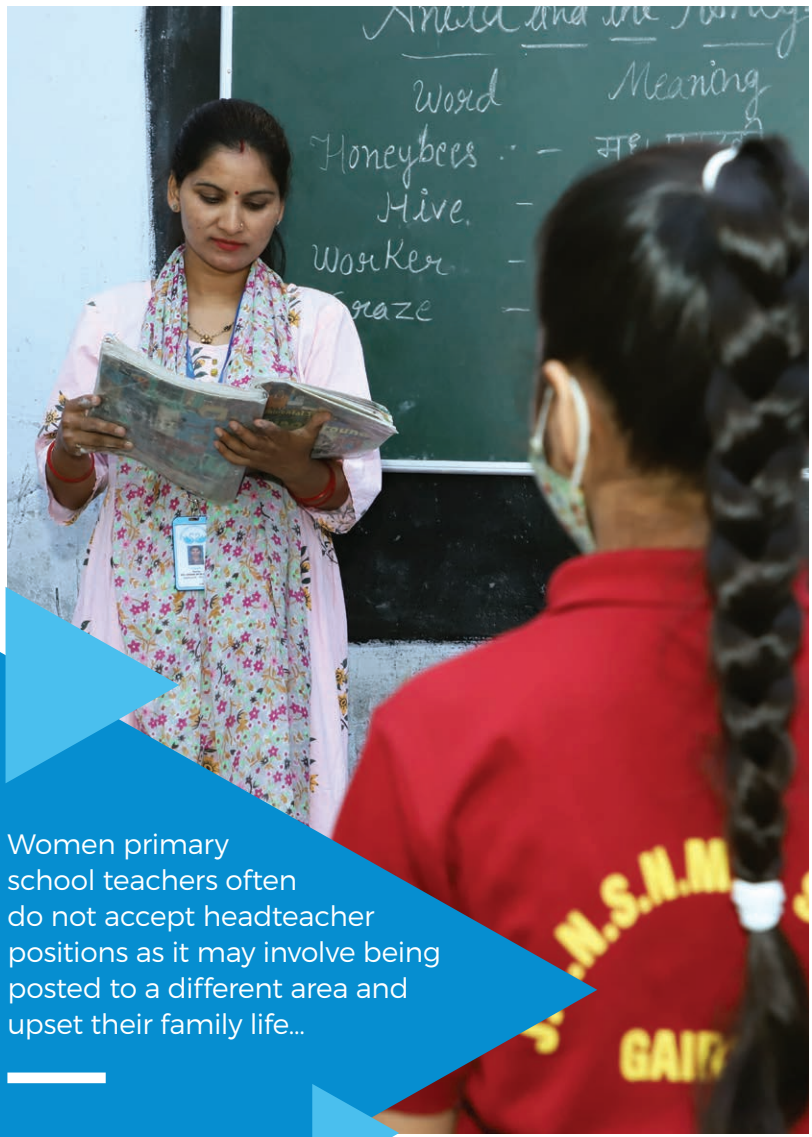
The process of transfers in Karnataka and Tamil Nadu is systematic and online. It is completed annually by June-July, thereby ensuring that teachers are in place at the start of the academic year. The process is guided by a policy based on vacancies, requests and rationalization. Madhya Pradesh and Odisha transfers on government orders. In several states, however, the process is not formalized nor transparent, may happen more than once a year, and is hence vulnerable to influences and interests. High incidences of transfers in election years are noted in some states.

In some states, a small proportion of 'transfers by deputation' takes place to cluster or block resource centres and to the district institute of education and training (DIET). These positions can be filled by senior secondary school teachers who reach the 'headmaster/school principal' pay grade. Teachers may also be deputed to fill administrative positions in offices of Samagra Shiksha and occasionally to the State Council of Educational Research and Training (SCERT) or the department of education.

In many states, policy makes provision for giving transfer-related privileges for teachers who work in remote rural schools. Based on their years of service in such schools, requests for transfer by these teachers receive special attention. Sometimes disciplinary action also involves transfer to remote or hard-to-reach schools. In some states, more inexperienced teachers may also be expected to fill and serve such positions in the early years of their careers.

Career structure, path and rewards

A career path that allows progression and development through its length could contribute to attracting, motivating and retaining teachers. It could also help in building a teaching force where diverse knowledge and competencies are recognized and systematically used to enable specialized roles to emerge. This could include addressing new teaching needs and professional development requirements, mentoring and support to teachers within schools by teachers, as well as in initial teacher preparation. Some of the diversified roles that could enhance teaching and learning quality include developing curriculum materials or special and inclusive education, or that of curriculum heads, evaluation and assessment heads, and counselling. If such roles were linked to professional development and certification, they could provide career pathways for teachers.



Women primary school teachers often do not accept headteacher positions as it may involve being posted to a different area and upset their family life...

However, by and large, the career of a teacher is quite flat both in government and private schools. There are few roles or incentives, aside from yearly increments, to which teachers may aspire as they grow more experienced, pick up more areas of specialization, or demonstrate their ability for academic leadership or administration.

Primary school teachers may aspire to serve as cluster resource persons – a position which they may be selected for or deputed to – but with no additional salary perks. Secondary school teachers may aspire to positions in the block resource centre (BRC) or in DIETs. In many states, after the discontinuation or reduction of support for BRC and cluster resource centre (CRC) positions by the central government (Sarva Shiksha Abhiyan or now Samagra Shiksha), such teachers continue to draw salary from the school where they occupy a sanctioned position. These positions are for a fixed period of between one and three years, after which they return to their cadre and school.

Karnataka, Maharashtra and Bihar are examples where teachers apply and go through a selection process to become block and cluster resource persons while also ensuring – in the case of Bihar – that there is representation of women (Government of India, 2011: 13). These practices however are not part of policy and may change from time to time.

As far as women teachers are concerned, it has been observed that they generally do not apply for BRC/CRC positions on account of the travel and administrative work involved. Women primary school teachers often do not accept headteacher positions as it may involve being posted to a different area and upset their family life and/or involve administrative work, dealing with accounts, and frequent travel to the block administrative office (Government of India, 2011).

After a specified number of years in service, most teachers become eligible for head teacher postings. In most states, the position is filled by seniority and not via performance-based selection. Promotion to DIET junior faculty positions – in states where such promotion is open to teachers – are also based on seniority and reaching the appropriate pay grade. Qualification norms specified in the Centrally Sponsored Scheme on Teacher Education (CSSTE) or NCTE guidelines are not adhered to. Teacher unions in general oppose performance-based promotions on the grounds that this is likely to be non-transparent and also lack objective criteria (Aslam, Rawal, Kingdon, 2021).

Some states permit a limited number of primary school teachers to be promoted to secondary school teachers (Trained Graduate Teachers or TGT) if they acquire the relevant academic qualification of an undergraduate degree in a school subject. This entails a revision in scale, but also a loss of seniority as they move from primary to secondary school cadre. There are no vertical career pathways within a cadre.

The dominant career pathway aspiration for contract teachers working in government schools is moving from contractual employment to regular employment

For contract teachers working in government schools, the dominant career pathway aspiration is moving from contractual employment to regular employment. A few states now have a policy in place to regularize the employment of contract teachers after a certain number of years in service – three years of contractual service in Madhya Pradesh, and six years in the case of Odisha (Ramachandran et al., 2018).

In private schools too, teacher careers tend to be flat. Beginner private school teachers note that they have little choice in the classes that they are assigned to teach, as senior teachers get to make their choices first. Even though their main aspiration is to begin as subject school teachers teaching their own subjects in older grades, most beginner teachers are assigned primary grades (even if they have a B.Ed. rather than a D.El.Ed.) (Latha, 2020).

Across all schools, there are informal 'horizontal' differentiations at the individual school level, and sometimes also an informal distribution of responsibilities for work that is generally rotated among teachers. These include supervision and accounting of mid-day meals, distribution of incentives to students, collection of nominal fee, timetabling, examination supervision, managing substitute teachers, etc. This is especially so in government schools that lack clerical and administrative support. Often, male teachers in primary schools are assigned the task of handling all reporting to the concerned block or district office (Parul, 2019; Latha, 2020).

There is as yet no developed set of roles within schools that could constitute a career pathway for a teacher, nor is there a system to formally link professional development to career pathways. The system does have honours and recognitions for exemplary teachers, innovative teaching practices, experiments in education or effective use of technology. Most of these are announced on September 5, the birthday of Dr. S. Radhakrishnan (1888–1975), the second president of India, who was himself a teacher and earned a school teaching licentiate from the teacher-training college at Saidapet, Chennai.

BOX 3.4

State awards and recognition for teachers

NATIONAL AWARD TO TEACHERS

This award by the Ministry of Education, Government of India, recognizes exemplary teachers and their work. This award is open only to regular teachers and headteachers working in government schools managed by the states or the centre. Contractual teachers are not eligible for this award. A maximum of 154 nominees are accepted out of three to six nominations from each state, one to two nominations from each union territory, and the remaining from other centrally managed government schools. Similarly, each state also grants state-, district- and *taluk*-level awards for best teachers.

NATIONAL AWARDS FOR INNOVATIVE PRACTICES AND EXPERIMENTS IN EDUCATION FOR SCHOOLS AND TEACHER EDUCATION INSTITUTIONS

This annual award is granted to teachers and teacher educators by NCERT. The main purpose of this award is to encourage teachers and educators to experiment with new and innovative teaching practices, and to create a forum for sharing such practices. The process for applying for this award has multiple stages. In the first stage, a project proposal is submitted to the NCERT describing the innovation the teacher or educator intends to try out. On acceptance, teachers must implement the innovation and submit a report of implementation along with reflections and learnings. Awards, a cash prize of INR 10,000 and a certificate, are granted to a total of forty teachers and twenty teacher educators from pre-primary to higher secondary levels.

NATIONAL ICT AWARDS FOR SCHOOL TEACHERS

This annual award is granted to teachers and teacher educators by NCERT. It recognizes teachers who have used technology effectively in their own teaching and learning, and impacted the learning of their students. The award aims to motivate teachers to integrate ICT into their practice. A total of ninety awards are granted across all states in India. The process of application and submission is automated and online, and requires teachers to form state- or union-territory-level committees consisting of five members.

Source: CETE research team, based on https://nationalawardstoteachers.education.gov.in/Guidelines.aspx; https://ncert.nic.in/teacher-innovation-awards.php?ln= https://ciet.nic.in/pages.php?id=ict-awards&ln=en. (accessed 30 September 2021).



Workload, job satisfaction, stress and professional community

Workload

> The general public underestimates how much teachers work per week – often by more than ten hours a week
>
> Varkey Foundation, 2018: p 79

Teachers are involved in a range of academic work over and above the work of teaching and making lesson plans. Public perception in India is that teaching involves a light workload especially suitable for women, enabling them to balance work and home life (Latha, 2020). However, documentation of teachers' work shows that their instructional and administrative responsibilities are intense and the workload is heavy (Ramachandran et al., 2018; Sankar and Linden, 2014). The period of pre-service teacher education is often the first time when student-teachers, placed on the other side, begin to realize the invisible work, and the rigour and demands of teaching (Akai and Sarangapani, 2017; Interviews of teacher educators conducted while preparing this report).

The roles and responsibilities of teachers are specified in the RTE Act, and include attending school regularly and punctually, conducting and completing curricula within the prescribed time, assessing the learning of children, communicating with parents, and adapting teaching based on assessment, interaction and feedback, along with other tasks that may be prescribed. As per the RTE act, teachers are required to work for a minimum of forty-five hours per week including preparation time (or seven and a half hours a day for a working week of six days).

At government schools, teachers' duties are generally classified into teaching and non-teaching, and involves work both within school – and at educational and non-educational sites outside of school – and work that is carried home. Teaching activities cover lesson planning, classroom instruction, assessing students' learning and reporting. More broadly, academic responsibilities also extend to timetables and substitution, remedial teaching and engaging with community. Non-teaching activities in school include administrative tasks such as coordinating mid-day meals, distributing incentives and free textbooks, registering children for Aadhar, obtaining disability certificates, collecting and maintaining data on students and the school and other events. Outside schools, teachers may be involved in educational activities such as curriculum or professional development. Non-educational activities include election, census, disaster management duties and others. While some of the listed activities are indeed extensions of school and education and mostly take place within the school premises, they are

Above: A teacher clarifies a student's doubt. Gurukul Vidya Niketan Uttarakhand, India.

tasks that do not require professional teachers' qualifications and are taken up by teachers due to a lack of administrative and support staff. They use up teachers' time that could have been utilized in teaching, preparation and evaluation.

The RTE Act 2009, by specifying the nature and extent of non-teaching work that can be allocated to teachers, brought to light a common problem of teachers being drawn away from teaching on account of work assigned by both education and district administration, frequently outside the school. This issue remains a matter of concern, particularly in primary and middle government schools. The National Curriculum Framework (NCF) too stresses that teachers need time outside the classroom (see Box 3.5). In an attempt to regulate the nature and amount of work allocated to teachers, states such as Karnataka and Rajasthan have specified broad roles, while Tamil Nadu has laid out very detailed daily and weekly schedules (Ramachandran et al., 2018). Sankar and Linden (2014) found that government school teachers in Andhra Pradesh and Uttar Pradesh spent between four and five hours per week, and teachers in Madhya Pradesh spent about ten hours per week, in non-academic activities. Overall, 14 per cent of school calendar days were not utilized for instruction, and between 20 per cent and 25 per cent of weekly work hours were spent on administrative activities.

BOX 3.5

Teachers need time outside the classroom for pedagogic planning, preparation and reflection: recommendations of the NCF 2005

- On a daily basis (at least 45 minutes) to review the day, make notes on children to follow up the next day, and organize materials for the next day's lessons (this is in addition to the time that they may need to correct homework).
- On a weekly basis (at least two/three hours) to take stock of learning, to work out details of activities and projects proposed, and to plan a group of lessons (unit) for the coming week.
- On a monthly/term basis (minimum of one day) to review their own work, children's learning, and map the contours of the learning activities planned for the groups they teach.
- At the beginning and the end of the year, two or three days each need to be allocated to evolve an annual plan for the school, in which they locate activities such as local holidays, annual events (national events, sports days, cultural events) and days for parent-teacher meetings that would involve the whole school. They would also plan excursions and field trips for their class groups, and for any projects that two or more classes would do together. They would also be involved in activities of preparing the school and class environment, putting up and changing posters and displays, organizing children's work, etc. Such planning time is also essential for the school to review its relationship with the community, and identify points of focused action in the year such as enrolment, retention, school attendance and school achievement.
- Current in-service training-related time allocation (compulsory 20 days per year)* could be partly diverted towards making time available for such reviewing, reflecting and planning.
- Monthly meetings organized for teachers at the cluster level could be based on groups of teachers teaching similar subjects and grade levels, so that they can share ideas and plan teaching for the forthcoming month together.**

Source: NCF 2005, Section 4.81, pp. 99–100. 2006, NCERT.

*The NEP 2020 requires fifty hours of the teachers' time to be devoted to professional development every year.

**The NEP 2020 recommendation of school complexes will lead to cluster resource centres integrating into the complex. Teachers across the schools of the complex could be involved in such joint planning and review.



As per the RTE act, teachers are required to work for a minimum of forty-five hours per week including preparation time

Job insecurity, poor pupil behaviour and ineffective leadership (85 per cent) are the main sources of stress identified by teachers

Work-life balance

Contrary to popular perception, many teachers report difficulties in establishing a work-life balance. Giridhar's (2019) account of government teachers in three states shows that the majority of the teachers working in rural and remote areas have long and difficult commutes and long working hours affecting their ability to balance work and life. A study of factors leading to work-life imbalance among women school teachers (N=100) in Andhra Pradesh (Madipelli, Sharma and Chinnappaiah, 2013) found that the main causes of stress were high work demands, poor working conditions and long working hours.

The level of satisfaction with respect to working hours, further advancement, salary and rewards were high for male teachers and very low for female teachers. With regards to pay and job security, the satisfaction of private school teachers was very low compared to government school teachers. The main sources of stress identified by teachers were job insecurity (94 per cent), poor pupil behaviour (90 per cent) and ineffective leadership (85 per cent). These findings are similar to the ones reported by Dawn et al. (2016) in their study of teachers in West Bengal. They found private school teachers more stressed than government school teachers (48.72 per cent versus 33.48 per cent). 69.57 per cent of school heads were stressed, and para teachers were more stressed than regular assistant teachers (58.18 per cent versus 31.92 per cent). They also found teachers were stressed from their daily commute when it was longer than an hour.

It has been noted by teachers themselves that there is virtually no difference between the workload of, or expectations from, a novice teacher and an experienced teacher. In India, aside from the induction training a few states provide to government school teachers, novice and new teachers in most states are given as much responsibility as experienced teachers, and do not receive any mentoring in the early years of their careers. Most novice teachers are left to figure things out on their own and benefit from informal interactions (Latha, 2020).

Autonomy and collegiality

Most teachers expect to exercise professional judgment and work with a high level of autonomy with NCF 2005, recognizing autonomy as essential (see Box 3.6). These professional expectations, although not centrally emphasized in teacher-training programmes, nevertheless seem consistent with the idea of guru, and other metaphors such as 'mother', 'guide', etc. that informs their work. Researching stress and job satisfaction among private and government school teachers in and around Chennai, Harish and Jeyaprabha (2018) found that flexibility, decision-making autonomy at work, and job security were rated by teachers as very important factors contributing to job satisfaction. Several beginner teachers working in private schools felt their professional judgment was not valued by management and they were expected to not do things differently, lest they disturb the status quo with parents established by the management. This was a source of deep dissatisfaction (Latha, 2020). Innovations by teachers were also often blocked by administrators on the ground that they went beyond textbooks. They preferred that teachers focussed on completing the syllabus (Ramachandran and Bhattachargea, 2009).

Opposite page: A teacher busy with course planning right after class, Rajkiya Intermediate College, Uttarakhand, India.

BOX 3.6

Teacher autonomy and professional independence

Teacher autonomy is essential for ensuring a learning environment that addresses the diverse needs of children. The teacher requires space, freedom, flexibility, and respect, just as much as the learner does. Currently, the system of administrative hierarchies and control, examinations, and centralized planning for curriculum reform, constrain the autonomy of the headmaster and teacher. Even when there is curricular freedom, teachers do not feel confident that they can exercise it without being taken to task by the administration for doing things differently. It is therefore essential to enable and support them in exercising choice.

As much as the classroom needs to nurture a democratic, flexible and accepting culture, so must the school institution and the bureaucratic structure. Not only should the teacher receive orders and information, but equally the voice of the teacher should be heard by those higher up who often take decisions that affect the immediate classroom life and the school's culture. Relationships between teachers and their heads and principals must be informed by equality and mutual respect, and decision-making must be based on dialogue and discussion. The annual, monthly and weekly calendars of activities need to provide time for staff interactions for reviewing and planning. There is a need to encourage an atmosphere that facilitates collaboration among teachers. There must also be mechanisms for conflict resolution. Often, technologies such as radio and TV are introduced into classrooms without consulting teachers on whether they would like to have them at all, and how they could be put to the teachers' use. Once these are there in the classroom, teachers are expected to use them, when they have no control over what will be delivered, or how it will integrate with their own teaching plans.

Source: NCF 2005, Section 4.8. 2005, NCERT.



Above: A teacher pays personal attention to a student. Rajkiya Intermediate College, Uttarakhand, India.

Professional community

Teacher unions in India are by and large seen in a negative and adversarial light and are largely invisible in policy processes. They are seen as resistant to bringing in accountability or changing pedagogy, and more keen on preserving service conditions (Beteille, 2017). Positive outcomes of union activism, in improving the condition of contractual teachers in some states, has not been recognized adequately. Unions help individual teachers negotiate administrative processes (Parul, 2019). The role of teacher unions in curriculum and pedagogical improvements has also not been noted or researched. Large, active national networks of teachers such as Bharat Gyan Vigyan Samiti were visible and significant during the literacy movement and the early days of the District Primary Education Project (DPEP). The continued role and efforts of such networks to strengthen the profession needs more research and documentation. They are a very significant yet poorly understood part of the professional landscape.

Accountability

Teacher accountability needs to be bidirectional. The system needs to be accountable to the teacher and create conducive work conditions just as the teacher needs to be professionally accountable

There are many factors to consider with regard to that very essential aspect of the public education sector – teacher accountability. These include teacher standards, monitoring and evaluation processes and a teacher information system that establishes transparent and fair means of teacher appraisal. From a legal point of view, the RTE Act has specified the roles and responsibilities of teachers. However states are struggling to hold teachers accountable, and government school teachers are perceived to lack accountability.

Teacher absenteeism has been repeatedly pointed out as a major concern in many states (Jha et al., 2021). Studies (Chaudhury et al., 2006; Muralidharan et al., 2016) find high absenteeism (between 20 per cent and 25 per cent) among teachers in the government education system, although studies also show that the incidence of absence of teachers from school without valid reasons is far lower, between 2 per cent and 5 per cent (Azim Premji Foundation 2017; Muralidharan et al., 2016). The government school teacher has many non-teaching and non-educational activities to attend to, both inside and outside school, that reduce time available for classroom instruction. This has not yet been addressed through policy (Kundu, 2019). Studies (Dhaliwal and Hanna, 2017; Duflo, Hanna and Ryan, 2012) on the use of biometric systems introduced into schools to track teacher presence – with financial incentives – find reduced teacher absenteeism. However, Mukhopadhyay and Ali (2021) argue for a less disciplinary approach to teacher accountability, and to consider teachers as professional cadres contributing to educational reform.

Teachers' accountability towards students' learning outcomes is also impacted because of the conflict between the different roles – teaching, administrative, election, census and community mobilization duties – the teacher is expected to perform (Ramachandran et al., 2018). Peer accountability among secondary school teachers was seen in four states – Chhattisgarh, Mizoram, Rajasthan and Telangana – through a practice-

based and community of practice (COP) model of professional development. Teachers motivated each other by sharing practice of using EdTech tools and modules in their teaching on the Communities of Practice (CoP) that developed pedagogical support through a university school connect (Thirumalai et al., 2019).

Teacher accountability needs to be bidirectional. The system needs to be accountable to the teacher and create conducive work conditions just as the teacher needs to be professionally accountable. The work conditions with regard to basic and professional amenities for teachers are improving (see Chapter 2). However, other aspects – teacher standards, monitoring, evaluation and appraisal systems – are yet to be developed or are very weak (Ramachandran et al., 2018). One study finds micromanagement of teachers' work – through scripted lessons to be followed and performance appraisals based on student outcomes – in controlled and highly competitive environments of private corporate schools. On the other hand, wide variations are seen between teachers in government schools where the management style is laissez-faire. Accountability mechanisms need to strike a balance between strict control and laissez-faire, while valuing teacher autonomy. Teachers' own appraisals can be made credible if they are not high stakes, and linked to professional development pathways. Shaala Siddhi (shaalasiddhi.niepa.ac.in) has shown how such a system can work in the case of school self-appraisals. The Teacher's Self-assessment: Guidelines and Rubrics (TSAR, earlier PINDICS) offers such a framework for teacher appraisal (see Box 3.7).

BOX 3.7

Teacher's self-assessment: guidelines and rubrics (TSAR)

In 2013, NCERT developed guidelines and tools for assessing teachers' performance at the elementary level called Performance Indicators for Elementary School Teachers (PINDICS). Though this was a self-assessment tool for teachers, it was designed in such a manner that the Cluster Resource Centre /Block Resource Centre coordinators or other supervisory staff could also use it for assessing the performance of teachers, supporting them through appropriate teacher development programmes, and making the teachers accountable to their responsibilities.

PINDICS was developed specifically for the elementary stage teachers, but later on, the need for self-assessment of teachers at all the stages was felt. Therefore, a tool including guidelines for the self-assessment of teachers' performance entitled 'Teacher's Self-assessment Rubrics (TSAR)' was designed. This tool was made for teachers working at all the levels of school education for assessing their own performance based on their expected roles and responsibilities. This tool was intended to identify their areas of strength and challenges when they perform their duties as a teacher, and facilitate them to enrich the teaching-learning process.

TSAR has been developed through a series of discussions with teachers, teacher educators, and other experts. It consists of six performance standards:

1. Designing learning experiences
2. Knowledge and understanding of the subject matter
3. Strategies for facilitating learning (including experiential learning and toy-based pedagogy)
4. Interpersonal relationship
5. Professional development
6. School development

Under each performance standard there are a set of Performance Indicators (PI) which are in the form of statements that reflect the expected role of a teacher. There are forty PIs, which are assessed on a continuum specifying the levels of performance ranging from Level 1 to Level 4 as per four descriptors. Level 1 indicates that the teacher has not approached the expected standard as per that particular PI and Level 4 indicates that the teacher is beyond the level of expectations as per that PI. The descriptors given under each level for every performance indicator will help the teacher understand where he/she stands and what more he/she needs to do in order to reach the expected level. Further, it will also help to understand their expected roles and responsibilities in facilitating students' learning.

Self-assessment by teachers not only helps them identify their strengths and weaknesses, but also to evolve as a reflective practitioner. Thus, this document as a self- assessment tool for teachers presents a prospect to contribute successfully in continuous professional development activities. It also provides the teachers with an occasion to display their exceptional performances.

The draft version of the document was uploaded in the NCERT website (https://ncert.nic.in/pdf/announcement/TSAR.pdf) and comments were received from states/UTs. These included suggestions for attaching documents as evidence of performance, adding indicators related with practical activities especially in the case of secondary and senior secondary classes, and translation of TSAR into different languages. The final English version was prepared incorporating the feedback from states/UTs and NEP 2020 recommendations. A Hindi version and a TSAR mobile application are in the process of development. TSAR is a live document that can be improved, enriched and updated.

Source: Contributed by NCERT. https://ncert.nic.in/pdf/announcement/TSAR.pdf (accessed 1 October 2021).

BOX 3.8

Improving systemic quality: centrality of teaching governance in the Performance Grading Index

The Performance Grading Index was designed in 2017 by the Department of School Education and Literacy, Ministry of Education, Government of India, and applied from the year 2017/18. The PGI for 2019/20 uses seventy parameters, fifty-four of which have new data for 2019/20, largely drawn from UDISE+ and pertaining to government and government aided schools. Sixteen parameters pertaining to the National Achievement Survey(NAS) are from 2017.

The assessed domains include Learning Outcomes and Quality, Access, Infrastructure and Facilities, Equity and Governance Processes.

Of the 360 units used to assess governance processes, (36 per cent of the index), 250 units (25 per cent overall, and 70 per cent of the governance processes) pertain to teacher-related metrics. They include availability of teachers, availability of subject teachers, teacher evaluation/appraisal and supervision, availability of school leaders, systems of transparent appointment and teacher transfer, systems for teacher attendance management, and availability of CPD for teachers.

Source: UDISE+, https://pgi.udiseplus.gov.in/#/home; https://pgi.udiseplus.gov.in/PGI-State-2019-20-Brochure.pdf (accessed on September 30, 2021).

Below: Most students are eager to answer the teacher's questions. Rajkiya Intermediate College, Uttarakhand, India.





A teacher assesses students in class.
RKJ.S.N.S.N.M. Inter College, Uttarakhand, India.

Summary

The teaching profession has average status in India, but is a career of choice for women and youth from rural areas.

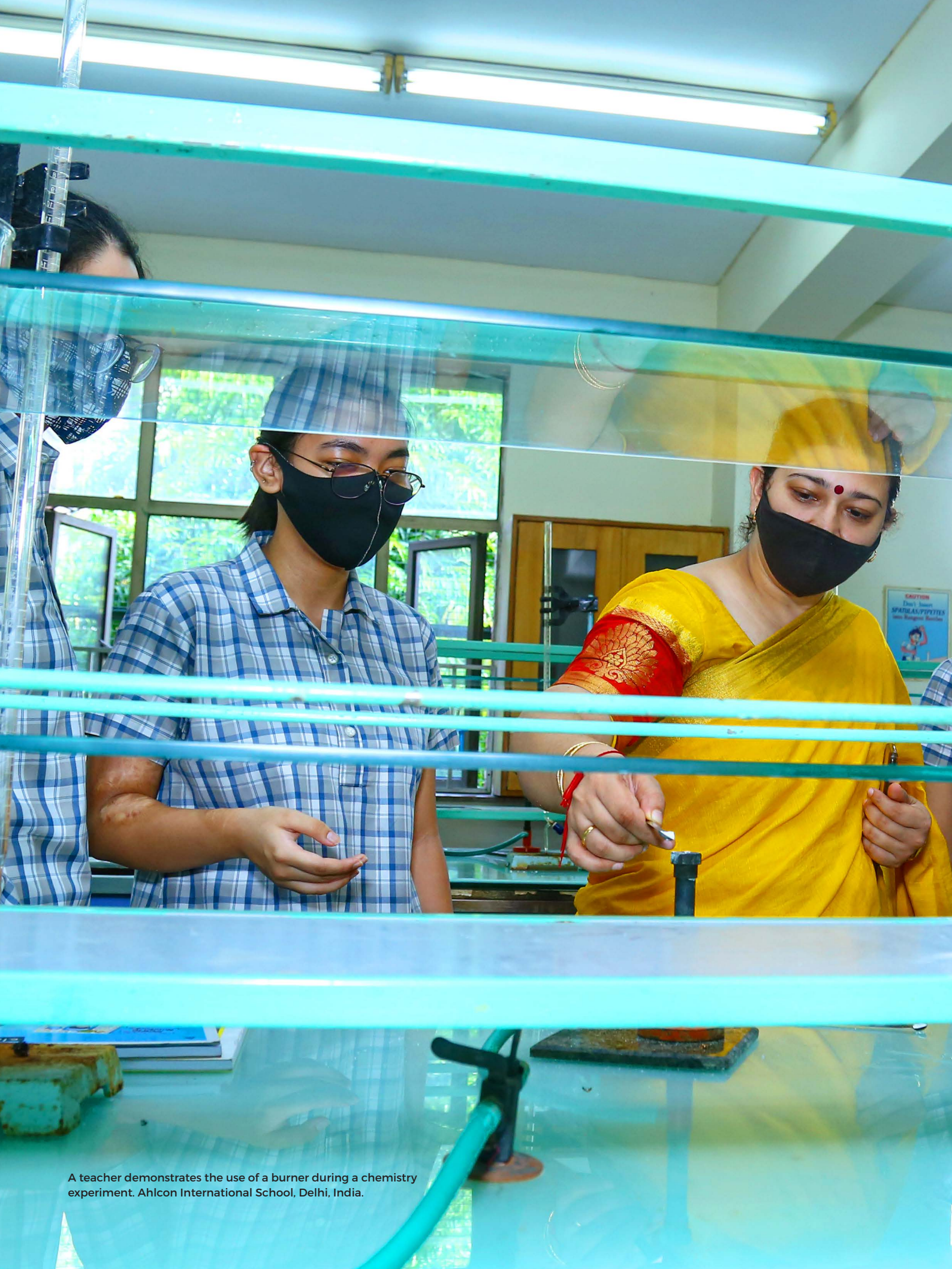
Private school teachers and early childhood education teachers are very vulnerable, with many working without contracts and at low salaries with no benefits of health coverage or maternity leave.

Several states have introduced TET as part of recruitment. Both direct and indirect recruitments continue. Technology-aided teacher deployment has been adopted in few states. Overall, teacher governance is the focus of systemic reform and the Performance Grading Index, accounting for 70 per cent of the governance metric score.

Teacher careers are flat.

Contrary to public perception, teacher workload is high although invisible, and a source of stress. Teachers value professional autonomy, and disregard of this is a source of demotivation and stress. Professional teacher networks and unions can help strengthen teachers' voices in the system in matters of policy and governance.

Most accountability systems tend to emphasize monitoring. Some initiatives such as TSAR are based on self-appraisal, and Shaala Siddhi recognizes teachers' roles in the entire school's functioning. Professional standards need to be made a part of a larger system and used with reference to professional development rather than accountability.



A teacher demonstrates the use of a burner during a chemistry experiment. Ahlcon International School, Delhi, India.



CHAPTER 4

Teaching practices in India

The chapter presents an overview of dominant pedagogical practices and examines why they persist. It reviews research on inclusive pedagogies that raise student learning quality, and research on how teachers can be supported in changing what they do.

4 Teaching practices in India

> “[T]here is a characteristic experience involved in an educative process which is essential and therefore non-negotiable. … In as much as education is related to the human capacity for setting new goals for oneself and the world, and not merely to pursue given goals, we can regard the capacity of imparting agency as an intrinsic characteristic, and hence an indicator of quality, of education. … This capacity of education arises out of its nature, … education works in rather long-time horizons, both in the lives of individuals and more so, in the life of collectivities defined by caste, class or gender.”

Kumar 2010, 12

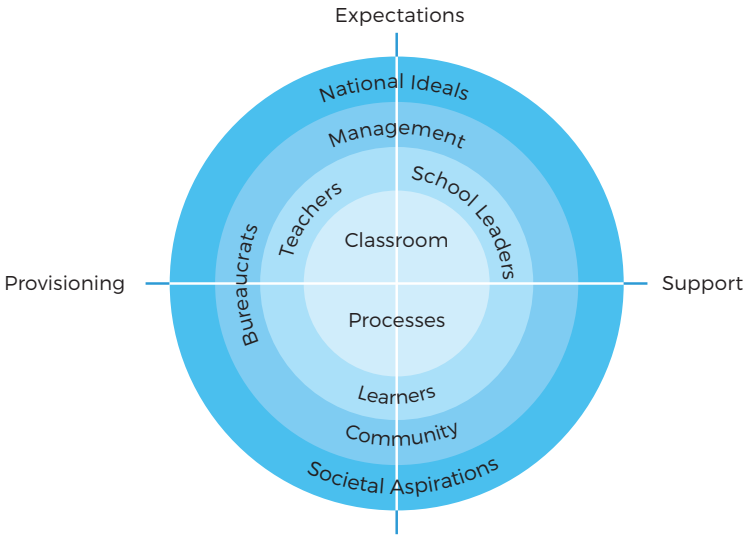
Teaching is a complex process and involves coordinating and managing various aspects of the teaching-learning situation. The teaching triad represents the dynamic interactions between the teacher, the learner and the subject matter. Teaching is influenced by the personal attributes of teachers themselves, the learners, and the milieu of the school, making it more of an ‘emergent’ practice rather than the result of applying pedagogic principles. Teaching is not only the ‘performance’ or the action, but includes the intentions, theories and beliefs of teachers along with contextual features (see Figure 4.1). Learners’ understanding, their capabilities, dispositions, habits, agency and identity are formed in the process. Teaching quality is therefore of central importance in delivering the right to quality education, to ensure that educational ‘goods’ or desirable outcomes are delivered, and to minimize, if not eliminate, ‘miseducation’.



Below: Students enjoy a Hindi lesson with their teacher. Rajkiya Intermediate College, Uttarakhand, India.

Teaching quality is of central importance in delivering the right to quality education

FIGURE 4.1
Situating teaching in the landscape of influences



Source: CETE research team.

The Right to Education (RTE) Act 2009, National Convention for Protection of Children's Rights, the National Curriculum Framework (NCF) 2005 and the National Education Policy (NEP) 2020 highlight the importance of teaching quality, and simultaneously draw up an agenda for improving it. Part of this concern is the more narrow, instrumental linkage of teaching to learning outcomes – it is now established that teaching quality is central to learning outcomes of students. The wider concern, which is articulated in the RTE Act and comes from the importance of the right to life with dignity, is to ensure that children have positive educational experiences in school and are spared psychological and physical stress (See Box 4.1). NCF 2005[12] draws attention to the role of pedagogy in realizing the aims of education – all-round and holistic development of individuals, empowering individuals to realize their potential, and enabling a peaceful, just and humane society.

BOX 4.1

Curricular, pedagogic and evaluation procedures and standards mandated by the RTE Act

The RTE Act mandates procedures that ensure that the child in school will have positive educational experiences. This sets up curricular goals, as well as expectations of pedagogy and teaching quality. This includes not only what teachers need to do, but also the expectation that they will be supported in doing so. The Act envisions:

- conformity with the values enshrined in the Constitution
- all-round development of the child
- building up the child's knowledge, potentiality and talent
- development of physical and mental abilities to the fullest extent
- learning through activities, discovery and exploration in a child-friendly and child-centred manner
- medium of instructions shall, as far as practicable, be in child's mother tongue
- making the child free of fear, trauma and anxiety and helping the child to express views freely
- comprehensive and continuous evaluation of a child's understanding of knowledge and his or her ability to apply the same

Source: Right to Education Act, 2009, Chapter V – Curriculum and Completion of Elementary Education, Section 29.2.

Most Indian educational policies have taken the view that there is a need to reform and improve quality of teachers and teaching quality. 'Having content knowledge', 'need for excellence', 'attracting those for whom teaching is a first choice' are some of the terms in which improving teacher quality has been talked about. Teaching quality has usually been articulated in binaries.

- **Teacher-centric versus learner-centric**
- **Rote based pedagogies versus meaning-making**
- **From textbook-based or chalk and talk based to active and/or interactive pedagogy**
- **Traditional versus progressive**
- **Bookish versus relevant and localized**

The following sections examine and organize the literature on teachers' pedagogic practices to understand firstly, which pedagogical practices are important and seem to count and contribute to good education; secondly, what are the problematic qualities, why do they persist and what can be done to change them; and finally what supports and enables change. As pointed out earlier, pedagogical practices are informed by what teachers believe, and in presenting the practices, we also examine research on related teacher beliefs and their intentions.

[12] National Curriculum Framework 2005 was subsequently recognized as the 'curriculum and evaluation procedure laid down' by the NCERT, designated as academic authority (as per article 29, chapter V, RTE Act).

The pedagogic landscape in India

The dominant pedagogic culture in South Asia has been described as a 'textbook culture' by Krishna Kumar (1988). The textbook is central to and defines pedagogy and curriculum – there is an absence of other resources – teachers are relatively powerless to decide what will be taught, or when or how, and examinations are central. While the teacher may seem central, and the textbook culture may therefore appear to be 'teacher-centric', this pedagogy takes shape in and is a part of institutionalized and bureaucratic systems in which schools and teachers are enmeshed. Teachers may seem to be central, but are in fact 'instrumentalized'. They are relatively powerless and lacking in autonomy to make pedagogical and curricular decisions which stems from the state. The textbook culture largely owes its origins to the colonial state and its educational imagination (Kumar, 1988). Learner-centred pedagogical reform is the agenda of the Indian state and can be found in the critiques of colonial education and educational initiatives of Gandhi and Tagore. It has gathered momentum through indigenously articulated efforts and is an important aspect of the RTE Act.

Most studies find the classrooms in India tend to have 'teacher- and textbook-centric' activities dominating the classroom while there is lesser incidence of activities that could be characterized as 'student-centric' (see Table 4.1)

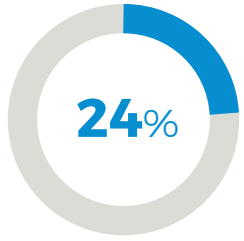
TABLE 4.1
Teacher-centric versus student-centric pedagogies

	Teacher-centric **Textbook based pedagogies** (Traditional · Formalist)	**Student-centric** **Child-centred/ activity-based pedagogies** (Progressive)
Epistemic authority	Teacher and text are primary authorities on knowledge.	Student, reconstruction of knowledge, making meaning are primary. Local knowledge may also find inclusion.
Teaching	Teacher telling, transmission. Pacing decided by prescribed, syllabus-based academic plan or by teachers.	Interactive and dialogic. Pacing negotiated between teachers and students.
Teaching-learning resources and materials	Use of textbook and blackboard for transmission of content, use of representations from textbooks, demonstration of teaching-learning materials (TLMs) by the teacher	Use of TLMs apart from textbook/blackboard – students explore the TLMs with or without teacher demonstration, teachers use multiple representations and make connections among them.
Tasks	Closed questions, textbook-based tasks, repetition, and may also involve recitation and copying text from board.	Open-ended questions, probing by teachers, engaging students in activities and authentic tasks. Use of activities with student engagement, opportunities for expression, discussion and construction of knowledge.
Use of groups	Individual student work.	Use of groups for collaboration on tasks with instructions to foster collaboration among students.
Connection with local context	Students' local knowledge does not find expression, nor is any connection made with school knowledge.	Teachers anticipate and elicit students' knowledge and build on it during the lesson.
Language in the classroom	Monolingual approach, usually in the official regional language. Language is mostly written, involving copying text and reading/recitation.	Mother tongue used by children for self-expression, and preferred as medium of instruction. May also be used in bilingual, multilingual and trans-lingual approaches in case medium of instruction is not the mother tongue.
Assessment	Assessment to identify student achievement and need for remedial instruction. Overall exam-oriented and primarily summative assessment.	Assessment includes formative and summative aspects and includes multiple modes. Assessment used as feedback to modify instruction and understand students' thinking.
Discipline	Strict and firm discipline, may also involve corporal punishment and humiliation.	Democratic and accessible ways of developing understanding of norms and rules or developing shared norms through classroom community building. Discipline as a way to provide structure for completing tasks.
Addressing weak students (inclusivity)	Repeated explanation and repeated practice, preparing questions to clear exams. Making students sit in the first row.	Giving extra time and attempt to understand students' difficulty, pedagogical strategies based on inclusive education to address diversity of students' needs and styles in classroom.
Use of Information and Communications Technology (ICT)	ICT resources for transmission of ideas.	Allows active learning and facilitate interaction among students using ICT as a tool for learning.

Sources: CETE research team, based on Kumar, 2018; Singal et al., 2018; Bhattarchagea et al., 2011; NCERT, 2011; Sharma, 2013; Nag-Choudhary, 2020; Chawla-Duggan, 2016; Agrawal, 2004; Saigal, 2012; Sankar and Linden, 2014; Majumdar and Mooij, 2015.



teacher-centric activities in the classroom



incidence of student-centric activities

Top: *Chitravarnan*: A teacher listens to students describing their drawing in Sanskrit. Composite School, Hoshiyarpur, Uttar Pradesh,India.

Studies find higher incidence of teacher-centric activities in total instructional time both in government and in private schools. (41 per cent teacher-centric versus 24 per cent student-centric, [Sankar and Linden, 2014]; 60 per cent time used for blackboard writing, reading from textbook and making students copy, repeating what the teacher says, versus 30 per cent classrooms where teachers asked questions, called students to write on the blackboard, used local context and group work, child-friendly and local language, [Bhattachargea et al., 2011]). Most teachers also find examinations useful to help students focus, and prefer them to 'continuous comprehensive evaluation' which they feel is burdensome and time-consuming (Ramachandran et al., 2018).

Research into subject areas gives further insights into subject-specific pedagogical practices of teachers, as well as help understand which efforts to change work and when.

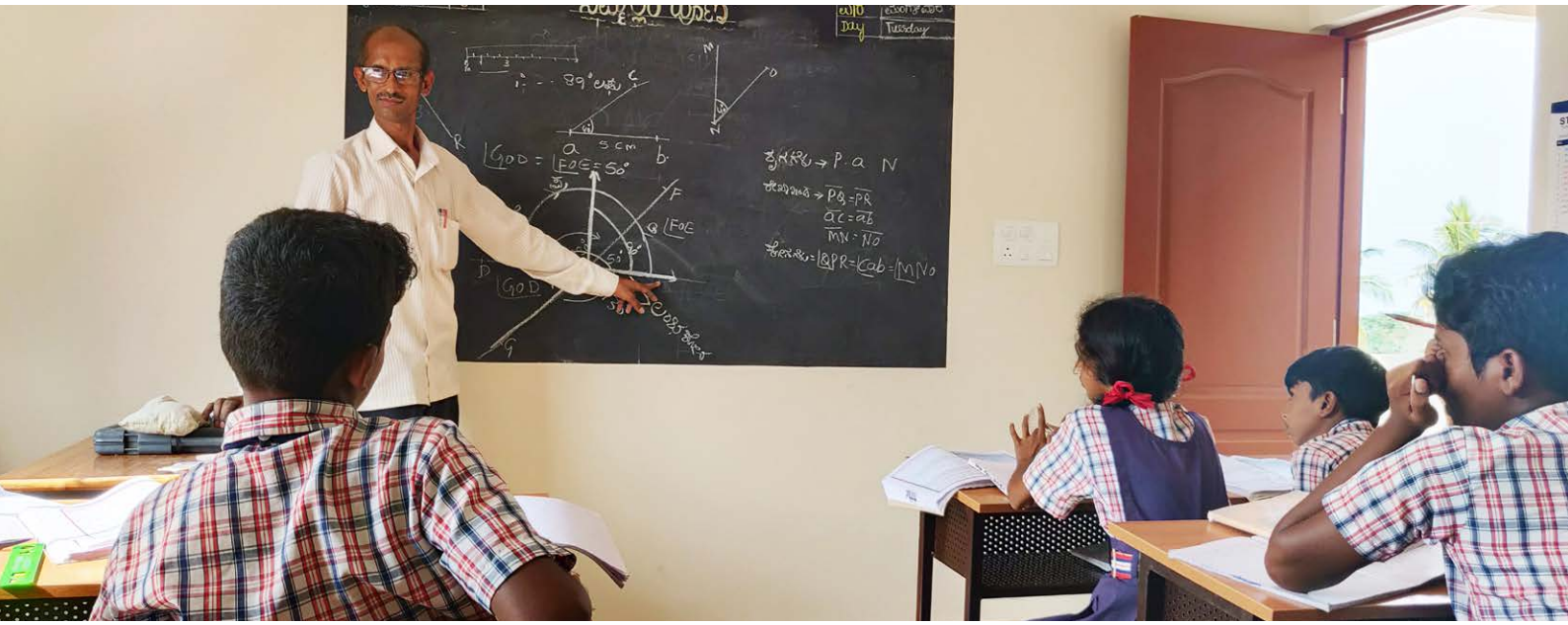
Literacy practices

Conventional early literacy practices found in Indian classrooms emphasize learning the alphabet through repetition, learning the *barakhadi*[13] and copying text from the blackboard or textbook (Jhingran, 2019; Gupta, 2006). Teachers control both the gestures and bodies of students from as early as pre-primary school (Chawla-Duggan, 2016). These literacy practices generally do not provide learners with opportunities to make meaning, use comprehension or experience reading and print. With the growing focus on 'foundational literacy', there is more attention being paid to the design of primers in Indian languages.

Use of communicative and conversational approaches, and valuing the learner's own language lead, first and foremost, to affirming learners' identities. However, teachers are found to have 'monolingual mindsets' (Chimirala, 2017), and resist 'diluting' the classroom by allowing languages that they believe are 'mere dialects' or 'uncivilized'. The negative impact is felt most by learners coming from marginalized communities, as their lives are not represented in the dominant cultures coded into the practices and curriculum of school. The practice of banning home language from use in schools is not uncommon, and frequently reported from private English medium schools as a means of forcing students to begin communicating in the official medium of instruction. In a recent study it was found that 36 per cent teachers reported that languages other than the official medium of instruction were discouraged and 18 per cent reported a ban on using any language other than English (Anderson and Lightfoot, 2018).

Language and literacy pedagogy, as well as language across the curriculum i.e. the use of a language in all curricular areas, are among the most important areas for concerted pedagogical reform to improve teaching quality. Moreover, the diversity of languages that need to be negotiated in the classroom – including home language(s), the regional language and English – is another challenge with implications for teacher preparation, and for recruitment and deployment of teachers. Increasingly there is also the realization that changing literacy practices of

[13] *Barakhadi* in Indian language scripts is equivalent to the alphabet.



Above: Students focus on a mathematics lesson. Caring with Color, Bengaluru, India.

Opposite page: A teacher explains a theoretical concept to two students, while two others jot down readings at the physics lab. Ahlcon International School, Delhi, India.

teachers not only requires changes in curricular resources and initial teacher education, but also professional development that can work with beliefs and understanding that teachers have regarding language, mind, identity and society, spoken and written language (oracy, literacy), home and school languages, bilingualism, etc. Research is revealing the need for more attention to quality of texts provided, and to guard against the tendency to reduce literacy pedagogy to techniques that can be implemented by well-meaning volunteers, as can be seen in some large-scale interventions (Menon, Viswanatha and Sahi, 2014; Sinha 2000). Multilingual teaching approaches are also gaining importance for Indian school contexts (Mohanty 2009; Pinnock and Vijaykumar, 2009). Languages comprise world views and hence enabling the rich diversity of languages and their world views to find expression in the classroom is essential to keep alive the multilingual fabric of Indian society and culture, and to make the classroom inclusive. It is a responsibility for which teachers need to be prepared (Agnihotri, 2019).

Mathematics pedagogy

Teaching of mathematics has tended to focus on calculation, recalling formulae and known procedures to solve problems and attaining speed (NCERT, 2006). Curricular reforms in mathematics draw attention to the importance of learning 'mathematization', relating mathematics to context and experience, problem-solving, multiple representation, and mathematical reasoning. Mathematics teachers however, by and large, continue to focus on solving examples and having students practice similar problems (Kumar, 2018). Research shows that teachers are by and large guided by their intuitive understanding of student errors, and are not aware of how students' mathematical concepts develop (Takker and Subramaniam, 2017). Moreover, teachers may not consider the majority of the students in their class capable of coming up with mathematical ideas (Srinivas, 2021). Research demonstrates learning gains when teachers change their pedagogy and use concrete manipulands, context and flexible strategies, along with visual representation to address difficult learning spots in place value and number operations (Mukherjee and Verma, 2005; Menon 2009). Learning gains are also observed with the use of meaningful context and flexible strategies in teaching concepts such as fractions (Subramaniam et al, 2015); (Subramaniam et al, 2008). Teachers further need to develop pedagogical content knowledge (PCK)[14] to support students transitioning from primary to middle school, when they start learning algebra (Bannerjee, 2011). Frequently teachers focus only on prototypical shapes and definitions in geometry (Kaur, 2016). Their own limited exposure to understanding mathematical practices (Naik, 2018) or possibilities of oral and everyday mathematics (Bose, 2020) has implications for the pedagogies they adopt, and the opportunities they create for their own students to 'mathematize' and share their ideas.

Professional development – in which teachers analyse textbooks and student errors, and work in collaborative groups to design tasks and reflect on implementation – are successful in supporting teachers in developing PCK and transforming their practice (Kumar et al, 2017; Takker and Subramaniam 2019). Engaging in challenging tasks with their students, and using ICT resources

[14] See Chapter 5, for explanation on pedagogical content knowledge.

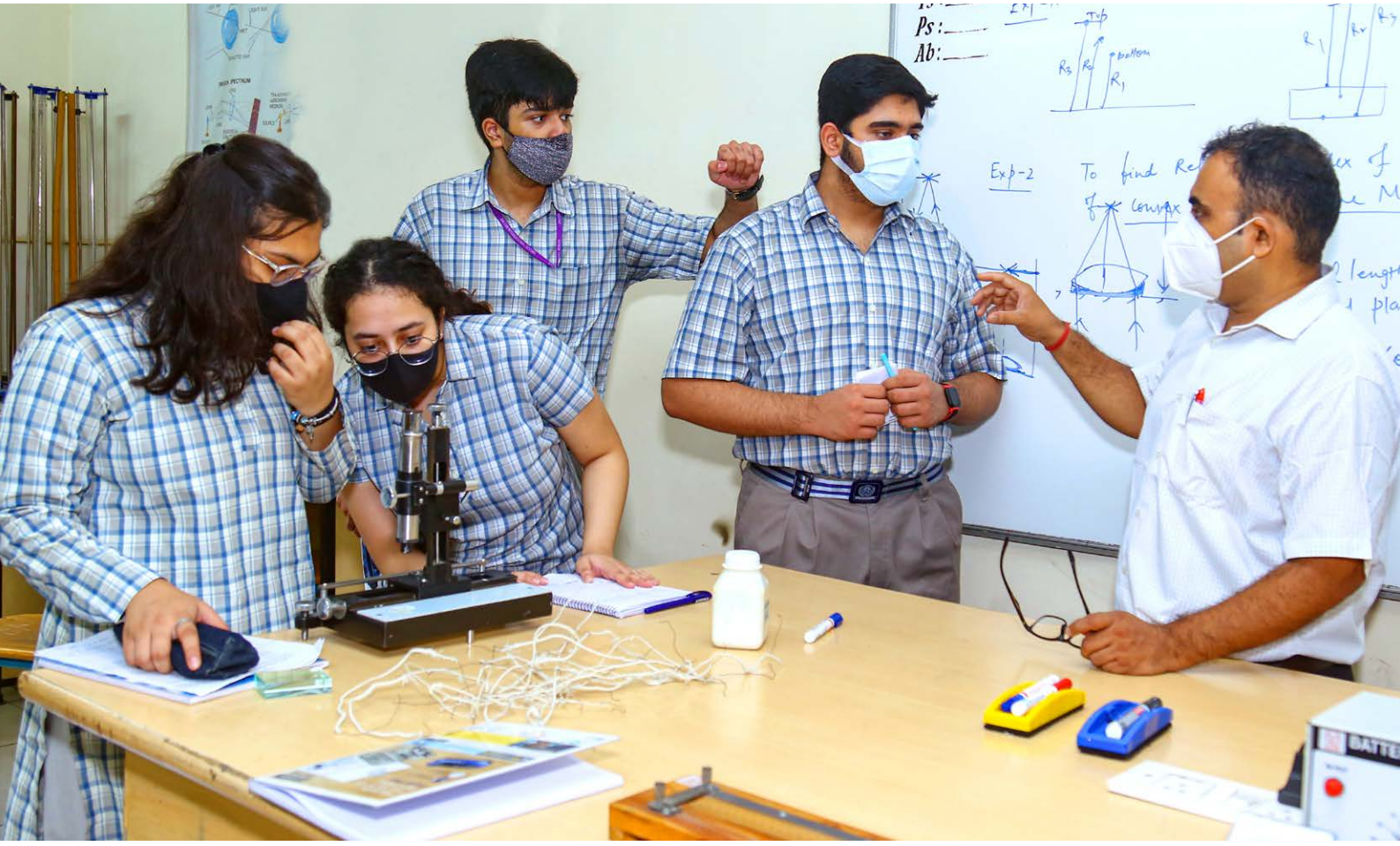
such as GeoGebra, spreadsheets, Turtle Logo and games, help them develop deeper mathematical understanding when tasks require them to use mathematical practices of making conjecture, providing reasons and justifications, and not simply arriving at answers (Kumar, Srinivas, Bose, Rahman, Thakur and Bapat, 2019).

Science pedagogy

Science teaching has tended to follow textbook-based methods, involving memorizing answers to questions in the textbook, rather than learning through hand-on activities and conducting experiments (Vijaysimha, 2013). This is to a great extent due to a paucity of lab facilities and resources. Even when experiments are done, they are generally separate from the lessons and students have little opportunity to make connections between lab experiments and the classroom lessons (Singh, 2020). Vijaysimha (2013) highlights the tendency of teachers to maintain a distinction between everyday knowledge and formal science knowledge in school by focusing on the textbook. Establishing these connections can be made possible through designed pedagogical sequences[15].

It is common in Indian science classes to see teachers doing most of the talking and asking most of the questions, while students' questions are either absent or clarificatory in nature. The discourse pattern commonly followed in science classroom is teacher lecturing (Singh 2020) followed by 'pseudo-inquiry' in which the IRE (initiation-response-evaluation) discourse pattern is followed. The teacher asks and evaluates the question, while students only respond. Teachers' discursive moves like setting epistemic and social norms for student talk, initiating and sustaining classroom dialogue, supporting multiple perspectives, being responsive to students' ideas, placing increasingly high cognitive demands on students, and providing cognitive and affective scaffolding to students are important for conceptual, epistemic, social as well as affective outcomes for students (Kawalkar and Vijapurkar, 2015; Bansal, 2018). Such practice requires teachers' orientation supported by their knowledge of students' scientific thinking, curriculum design, instructional strategies, and assessment. Environmental constraints – such as limited resources and large class sizes, pressures from a culture of testing, and limited access to professional development – are a barrier to implementing creative science-teaching practices (Nargund-Joshi, Park Rogers, Bhagwate, 2019).

[15] For a designed sequence in astronomy, see Padalkar (2021), and the SPIRALS (Supporting and Promoting Indigenous and Rural Adolescents' Learning of Science) approach which enables learners to research in a community of practice and tell the story of their engagement.



In the course of an ICT-based intervention to enhance quality of teaching and learning in science and mathematics, it was noted that when teachers revisited content in interactive ways, and had opportunities to discuss their own misconceptions, they were more ready to engage with their students in an inquiry-based approach and use hands-on activities. They were excited and reported satisfaction when they found the classroom interactive and many more students were involved. Seeing learning gains in their students was a key motivator (Padalkar and Shaikh, 2018).

Social science

Social science is referred to as social studies in school and includes history, geography and civics. There is a need to frame the objective of teaching social studies guided by professional standards of education and social science as a discipline, while developing the understanding of a humane and just society. NCF 2005 highlights the importance of social science education using critical pedagogy in issues of poverty, illiteracy, caste, class, child labour, gender, environment and human rights. It also highlights the need to make the perspectives of women and minorities integral to any historical event. Students need to develop an understanding of society and social change, as well as the skills to analyse them critically by taking multiple perspectives into consideration (Batra, 2009).

Below: A geography teacher points out a state on the map. Composite School Hoshiyarpur, Uttar Pradesh, India.



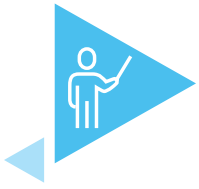
The teaching of social studies is dominated by expectations of memorizing, and no scope of developing critical perspectives. Moreover, since social studies is considered lower in hierarchy compared to the sciences, this further demoralizes the social studies teacher. The teaching strategies used by social science teachers generally include lecturing, reading out the text, paraphrasing, underlining or bracketing important points, dictating notes and reviewing by asking students to recall answers to questions (George and Madan, 2009). Clarke (2001) found that even when social science teachers found errors in textbooks, they did not feel they could make corrections. There is limited research on teachers' beliefs and practices in social science/ studies teaching.

NCF 2005 draws up the curricular and pedagogical reform agenda. Reforming social science pedagogy requires teachers to adopt more reflective inquiry in the classroom, analysing the quality of evidence and explaining human actions through critical analysis of the interaction between social institutions and natural factors. Local oral history projects such as Young Historians (*https://www.youtube.com/watch?v=VAwfZbrdA1Q*) show how teaching could enable students to develop a deep knowledge of history by talking to elders in their village, collecting facts from their perspectives, and then discussing it in class. Pedagogical efforts like using trips to museums and historical sites are absent in pedagogical discourse or are not documented. Teaching of geography could be transformed through extensive use of line drawings and photographs as tools to develop spatial sense and to represent physical and geographical features. Additionally, links between physical and regional geography could be established to enable students to see connections between natural phenomena and lives of the people (Batra, 2009; Sunny, 2006). Teaching civics, recast as political science in the NCF 2005, also requires a pedagogical shift to engage with active citizenship through knowledge of the economy and politics of the country (Batra, 2009).

Research studies on the practices of teachers of music, art, or physical education could not be located in time for this report. Although there are some initiatives to improve the experiences of students, we were unable to locate research on interventions focused on developing teachers and pedagogical practices in those disciplines. These are important gaps that need to be understood.



Above: Two girl students sharing a desk. RKJ.S.N.S.N.M. Inter College, Uttarakhand, India.



Corporal punishment is widespread, in spite of the RTE Act banning it and classifying it as physical punishment, mental harassment and discrimination

Pedagogical variation and school stratification

The limited research now emerging on pedagogical practices in private schools suggests that they may not be very different from government schools in terms of pedagogy (Sarangapani, 2018; Jain et al., 2018; Sankar and Linden, 2014). The social class of clientele and the school's founding ideology seem to be related to the pedagogy one finds. Sarangapani (2018) and Jain (2018) observed that 'all-round development' with pedagogies emphasizing understanding and self-regulated discipline, was found in English-medium private schools charging high fees, and vernacular-medium schools for the poorest of the poor – government-run or government aided or run by charities. Older schools, established by family trusts, tended to favour textbook-based pedagogies but also expected some understanding. In schools that trained students for competitive exams, students were expected to learn concepts and apply them to solve questions at very high speeds. The environment was intensely competitive and considerable teacher-time was given to individualized monitoring. Most low-fee English-medium schools had rote or drill type pedagogies. Teachers spent very little time on explanation, and instead focused on making students repeat and memorize standard answers to the textbook questions. Most of these schools were entrepreneurial and relatively new. The environment of these schools was tense and students experienced humiliation if their fee was not paid on time. The pedagogies were 'massified', children were rarely referred to by name. Even when research finds that these schools give 'value for money'— i.e. better learning outcomes and lower teacher costs — they stop short of endorsing their pedagogical practices, and additionally find that these arrangements may not be sustainable (Ashley et al., 2014).

Student behaviour and discipline/school violence

The RTE Act bans corporal punishment and classifies it as physical punishment, mental harassment, and discrimination. Disciplinary action may be taken on teachers who use corporal punishment. However, various research studies continue to find widespread use of corporal punishment (Garg, 2017; Ogando Portella and Pells, 2015) as well as teachers' belief that it is necessary and desirable, and that banning it will be detrimental to students (Majumdar, 2018; Nawani, 2013). Boys and children from disadvantaged backgrounds were significantly more likely to experience corporal punishment at the age of eight.

Poor student behaviour was found to be one of the main causes of stress among teachers (Jeyaprabha and Harish, 2018). The perception of the ideal student as an obedient and quiet individual who follows orders and respects the teacher is inherited from the idea of teacher as *guru* in Indian culture and is embedded in the minds of teachers (Sayed and Sarangapani, 2021). A study to understand how teachers deal with inattentive students in West Bengal (Majumdar, 2018) found that 84 per cent favoured 'smacking' them. Those against corporal punishment still felt that systems needed to be in place to help teachers manage classrooms. Initiatives to enhance knowledge of children's rights and human rights among teachers led to changes in perceptions and actions (Bajaj, 2011).



Above: A teacher makes English class interesting, interactive and inclusive, for positive learning outcomes. G.D. Goenka K.K.D, Delhi, India.

Opposite page: A teacher should help create an environment where students feel cared for and safe. Gurukul Vidya Niketan, Uttarakhand, India.

Teaching to make a difference

Inclusive teaching for positive outcomes

Most teachers working in government schools need to craft and forge inclusive pedagogies. Teachers can make their teaching practices meaningful and lead to positive outcomes for all their students when they

- have a positive attitude towards training and their students;
- think of pedagogy as communication and establish relationships with students;
- communicate inclusively, giving feedback and paying sustained, inclusive attention to all students;
- create an environment where students feel cared for and safe;
- and draw on students' backgrounds in pedagogic discourse.

(Westbrook et al, 2013).

Teachers in government schools and schools run by charitable organizations explain why they regard such pedagogy as important, and from where they draw the pedagogical ideas and motivation that enable them to persist with such practices even in difficult conditions. They aim to develop in their students what they regard as important life skills the students will need – self confidence, resourcefulness and problem-solving, resilience, and making meaning. Their teaching is not textbook bound or authoritarian. These teachers have strong professional identities and ethics often formed around metaphors such as guide, companion, mother or *guru*, from which they draw and craft their reciprocal bond with students (Sharma and Sarangapani, 2018). Satisfaction from working with young people, and the positive response from students are their central motivators.

Satisfaction from working with young people, and the positive response from students are teachers' central motivators

Improving learning outcomes

Teachers' 'résumé characteristics', or in other words, their training qualifications and experience, do not seem to be good predictors of student achievement (Azam and Kingdon, 2015). However, having professional knowledge and identity does seem to make a difference to learning outcomes. The National Assessment Survey (NAS) data analysis from 2017, notes the better performing states are different in the following aspects:

- teachers' understanding of curricular goals
- having high expectations from students,
- teachers' job satisfaction[16]

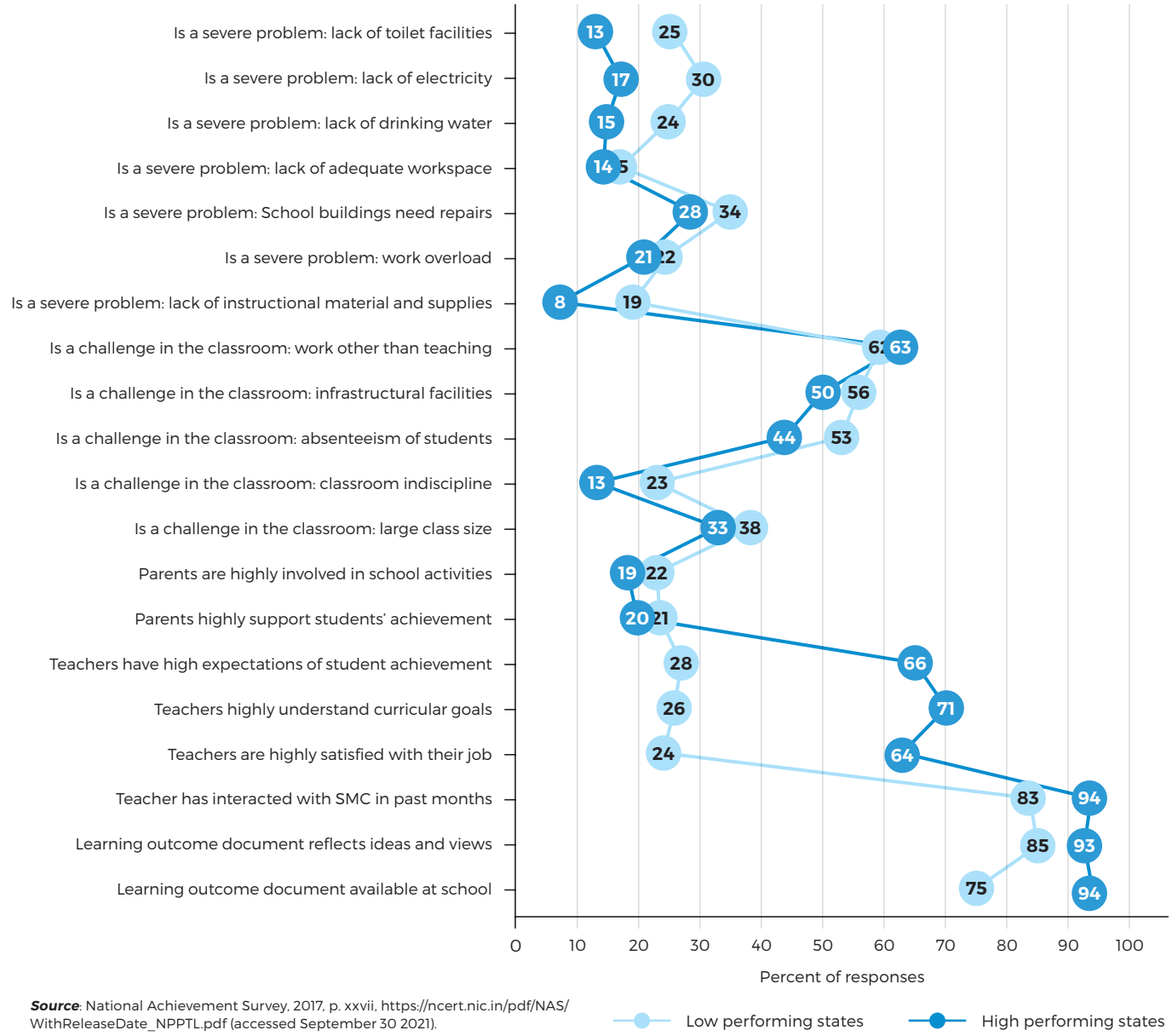
Student-centric pedagogical practices have a positive effect on students' learning (see Figure 4.2), (Sankar and Linden, 2014).

These dimensions brought to the forefront by the NAS analysis are consistent with the predictions of pedagogical theory regarding the importance and role of teachers' pedagogical knowledge, beliefs and professional identity in shaping their efforts towards furthering students' learning and their overall work ethic.

[16] NCERT, 2020.

FIGURE 4.2

NAS performance and teacher perceptions of school environment



Source: National Achievement Survey, 2017, p. xxvii, https://ncert.nic.in/pdf/NAS/WithReleaseDate_NPPTL.pdf (accessed September 30 2021).



Pedagogies and perceptions of 'ineducability'

It is not easy to be aware of and deal with the impact of poverty, violence, discrimination and injustice on children, and at the same time, remain positive. The routinization and bureaucratization of work and the inability to achieve consistency or maintain expectations of learning from students can affect professional agency. Moreover, limited depth of pre-service professional education may not dislodge culturally sanctioned notions of educability that teachers may have about children from poorer sections of society, specific castes and tribe groups, first generation school-goers, and children with special needs. Perceptions of deficit, such as 'low IQ', 'being disruptive', 'lacking concentration' can lead to teachers neglecting their students or adopting pedagogies that focus on 'disciplining' through corporal control and psychological humiliation to be subservient, obedient and voiceless, to civilize and control, and restrict instruction to basic functional literacy through repetition and rote. Such teachers may be demotivated, and also believe that they are working in 'deficit situations' (Iyer, 2013; Sarangapani, 2018; Dalal, 2014; Majumdar and Mooij, 2015). Sankar and Linden (2014) found that between 20 per cent and 25 per cent of teachers' work time in school goes into non-teaching work, leading to less time in class. Teachers who may be in school but not in their classrooms, as well as claims of absentee teachers in some states, suggest that children may be attending school, but are neglected, wasting their time and not engaged in meaningful learning activities.

Research on the experiences of students from marginalized backgrounds – following the RTE Act provision to enable up to 25 per cent of students from economically weaker sections to be educated in private schools – shows incidences of negative labelling by teachers as 'naughty', 'academically weak' and 'incapable' (Lafleur and Srivastava, 2019).

Below: A teacher shares chess tips and techniques. Gurukul Vidya Niketan, Uttarakhand, India.





Above: Children enjoy a storytelling class. A school in Shri Ram colony. India.

Analysing and addressing quality deficits the New Public Management (NPM) way

This idea of deficit teaching quality dominates the imagination of bureaucrats and civil society organizations, is highlighted by media, and also underlies policy (Sayed, Vidya and Jain, 2021). It has now become akin to a hegemonic 'common sense', pervading even researcher commentary.

Explanations offered for this state of affairs[17] mostly centre around managing teacher accountability, contracting and remuneration. For example, teachers are perceived to be not accountable as they have employment for life and cannot be fired (implying a weak state). Or that they have no incentive to produce results as there are no differential rewards, or performance-linked pay. Teachers are also accused of immorality – that they draw absurdly high salaries (far above the market rate) and allegedly spend more time in politics, private tutoring, and even money-lending than teaching.

This line of analysis, along with comparisons with private sector and contractual employment/para teacher 'efficiency' as well as 'cost-effectiveness', leads to suggestions and recommendations involving the following measures to improve quality of teaching. Using the possibility of job loss or pay loss usually associated with contractual appointments (as opposed to regular appointments) to improve accountability, incentivizing performance by including performance pay, rationalizing teachers' salaries, checking quality at entry point through eligibility tests, monitoring attendance (via biometrics), monitoring performance by linking it to professional development, student learning and rewards, and micro-designing teachers' work by providing them with lesson plans to follow or shifting their role to facilitating while technology takes centre stage.

Such forms of new public management are beginning to find expression in policy, alongside the call to improve professionalism of teachers.

A 'teacher as professional' approach to quality improvement

Evidence is also emerging of the positive relationship between improving working conditions of teachers and strengthening their linkages with the system through academic supervision, and greater teacher effort and student learning outcomes.

Analysis from the NAS 2017 round (p. 166–168) indicates that higher learning outcomes have been achieved in contexts where there are better organizational ethos, and teachers have better employment conditions. These include better and more supportive working conditions and teaching-learning environments, having an academic ethos in the school with a functioning library, literary and other activities, opportunities to use a lab, possibility of dialogue with colleagues and being permanently employed and having six or more years of experience.

Research shows professionally sound views and understanding of teaching-learning are found more among government school teachers compared to private school teachers. More government teachers had a positive attitude towards – and understanding of – teaching-learning, while more private school teachers believed that children learn best by memorization and being provided with answers (Sankar and Linden, 2014). In general, government school teachers are more qualified professionally and academically than private school teachers.

[17] For such 'deficit' portrayals of teachers involving (lack of) accountability, dereliction of duty and immorality, see Kingdon and Muzammil (2003) and Vasavi, 2015.



Above: An interactive way of learning. A teacher explains the practical usage of a globe. Rajkiya Intermediate College, Uttarakhand, India.



Better infrastructure along with more supervision and engagement by school supervisor can have an overall positive effect on school ethos

Student-centric practices that lead to better learning outcomes are more likely to be found in multi-caste or higher socio-economic groups, while traditional pedagogical practices prevail in schools with student bodies belonging to lower socio-economic or caste strata. Studies have shown that more traditional instructional methods prevail in schools of the latter kind, whether government or private (Sankar and Linden, 2014; Sarangapani, 2018; Jain, 2018). In larger schools located in multi-caste villages, more active pedagogies are found and students' learning outcomes are higher (Anitha, 2005). More student-centric activities are evident (Sankar and Linden, 2014) in schools that have better facilities, are larger and located in multi-caste villages (Anitha, 2005). Student learning is also higher.

Schools with overall better academic supervision and ethos have more motivated teachers, better teacher attendance, and have better learning outcomes. Jalan and Panda (2010) found that schools with higher level of supervisory visits by block and cluster resource centre (BRC and CRC) officials had more active pedagogies and higher learning outcomes for students. Kremer et al. (2015) observed that prevailing institutional conditions were a more significant influence on teacher attendance and absenteeism, than any lump sum variable such as salaries or training.

Teachers identified multi-grade teaching (ranked 1 by government school teachers), lack of parental motivation (ranked 1 by private school teachers) and irregularity of students as hurdles that prevented them from comprehensively putting to use all their knowledge of teaching (Sankar and Linden, 2014). However, even after decades of progressive pedagogy reform, seating in most classrooms was traditional (Sankar and Linden, 2014).

Improving working conditions of teachers in schools – beginning with better infrastructure along with more supervision and engagement by school supervisor – can have an overall positive effect on school ethos, making teachers feel that their professional commitment to students is supported by the system and that they are valued as professionals. This has been seen in the case of schools in Delhi (see Case Study 4). Collegiality is also emerging as a crucial element in the local micro-environment of teachers, enabling them to find support in negotiating and resolving the various pedagogical challenges they face (Latha, 2020). Systemic attention paid to teachers has a positive effect on their interest in work and the effort they put in under difficult circumstances. It not only conveys to teachers that they are valued, but also that their professional capabilities are valuable and essential to the teaching process.

CASE STUDY 4

The case of Delhi: strengthening schools as professional spaces

The reforms brought about in Delhi's education model since 2015 have focused on modernizing infrastructure, capacity development of teachers and principals, making school administration accountable through a strong School Management Committee (SMC) network, and programmes aimed at achieving learning outcomes for students through ability-based groupings in classes. This has been matched by increases in the education budget – up to 22.8 per cent in 2016/17 to 26 per cent in 2020, one-fourth of the total budget (Marlena, 2017; Hindustan Times). The claim is that such inputs have resulted in government schools in Delhi having better pass percentage of 5.9 percentage points than private schools for 5 consecutive years. What could have contributed to these results?

Improvement in the infrastructure, including aesthetics and facilities, was considered as a key factor that helped 'boost the morale of the teachers and the motivation of the students' (Sharma, 2020).

The second important focus has been on professional development of teachers as well as principals through visits and workshops from institutes like Cambridge University, National Institute of Education, Singapore, IIM Ahmedabad and others, aimed at learning from 'best practices from India and abroad' (Sharma, The Hindu, 2020). The training model was altered to a peer-learning-based experience for preparing resources, as well as in the mentor teacher programme by providing school-based professional support.

The principals underwent school leadership courses from Cambridge University and IIM Ahmedabad aimed at developing the capacity to make 'School Development Plans, setting quantitative and qualitative goals, budgeting, ascertaining human resource requirements" (Marlena, 2017).

A 2020 study by Lall and IRDSE (Institute for Research & Development in School Education) reports that teachers appreciated the improvement in infrastructure and professional development opportunities. Teachers valued subject-specific, needs-based (p. 11) opportunities to reflect on developing socio-emotional bonding with students, and in-service professional development opportunities over pre-service for contributing to their teaching practice through practical inputs. Even the most disengaged teachers valued the opportunity provided by the workshops to share with their colleagues and learn from them. Teachers reported using in the classroom the activities and resources provided in the training along with explanations about how they help children to learn. However, they felt that although the inputs provided for inclusion in classrooms did sensitize them, they were not enough. They were also uncomfortable about socially segregating students in different groups as it implicitly connoted segregation based on intelligence and superiority.

Delhi schools demonstrate that the political will to implement reform by strengthening the identity of teachers and schools, teachers' morale and their capacities can bring about visible results.

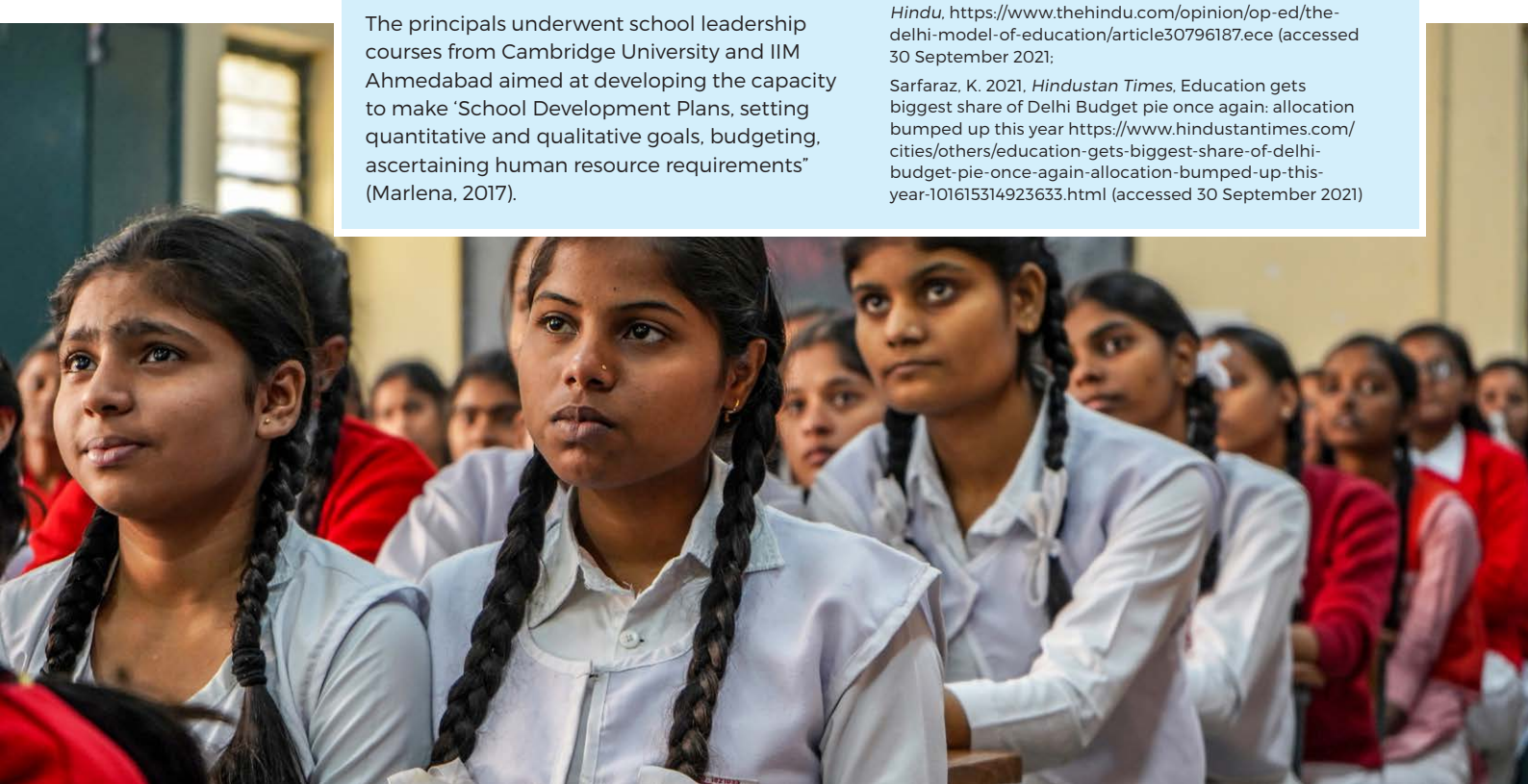
Sources: Lall, M. and IRDSE. 2020, What works and why in Indian government schools - Teachers' voices in Delhi NCR;

Marlena A. 2017, https://aamaadmiparty.org/understanding-delhis-education-revolution/ (accessed 11 August 2021)

Sharma, S. 2020, The Delhi model of education, *The Hindu*, https://www.thehindu.com/opinion/op-ed/the-delhi-model-of-education/article30796187.ece (accessed 30 September 2021;

Sarfaraz, K. 2021, *Hindustan Times*, Education gets biggest share of Delhi Budget pie once again: allocation bumped up this year https://www.hindustantimes.com/cities/others/education-gets-biggest-share-of-delhi-budget-pie-once-again-allocation-bumped-up-this-year-101615314923633.html (accessed 30 September 2021)

Below: Attentive girl students at a lecture. Delhi Government School, Delhi, India.



Teachers' voices on good teaching and professional working conditions

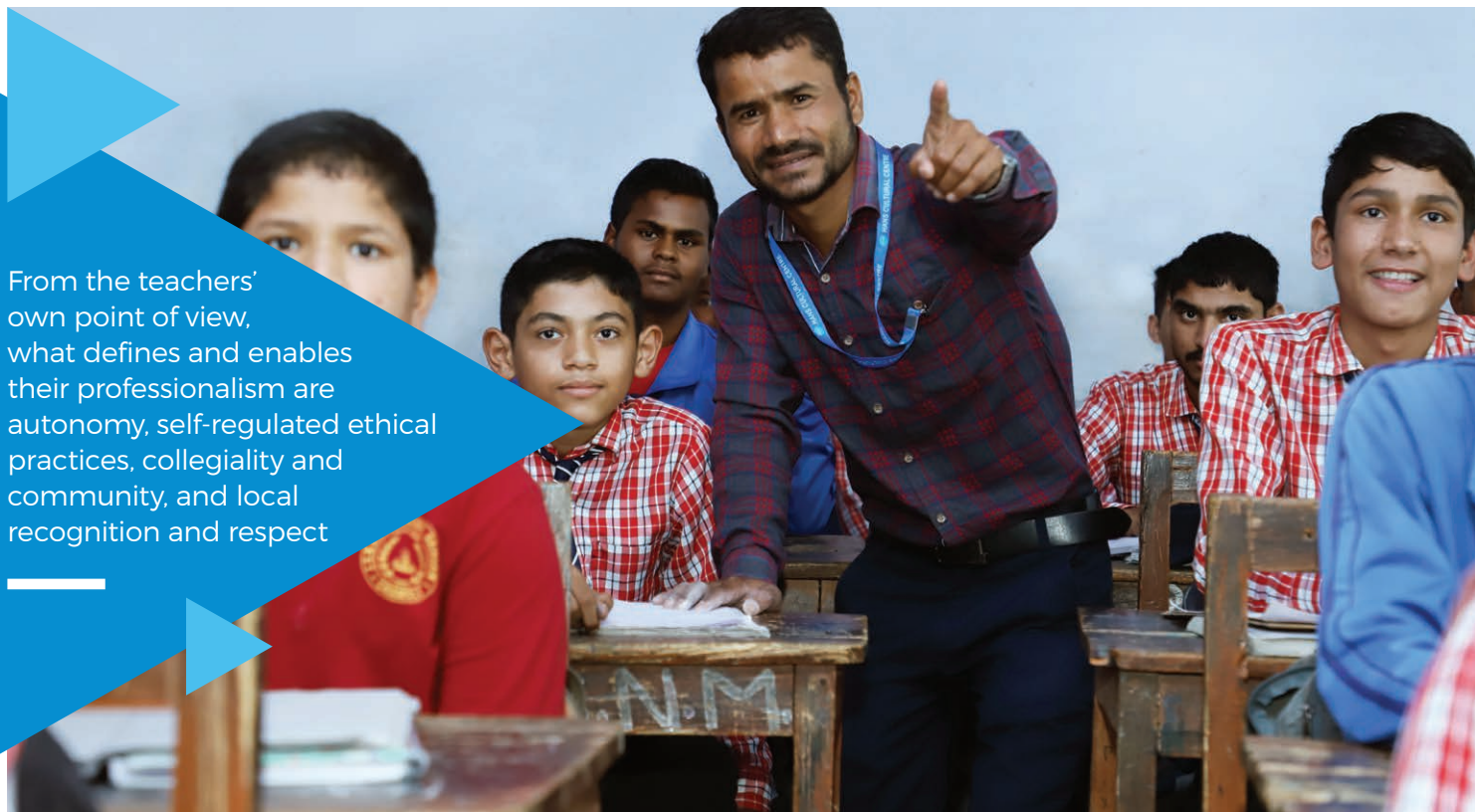
What teachers believe and understand is shaped by culture, their personal experiences, professional education/initial teacher education, and their experiences in the classroom. These beliefs and understandings shape what they do, in other words, their pedagogy.

Teachers gain motivation from the enjoyment of teaching and interacting with students in the classrooms. These interpersonal relationships with young people provide them with energy and purpose. Even those who may not have regarded the profession as their first choice are found to remain after joining because of the satisfaction they gain from working with children and youth (Vijaysimha, 2013; Sarangapani, 2021). Teachers' own students are their most important reference group (Nias, 1989).

Confidence in subject matter and reflection on experiences, both professional and personal, enable teachers to find and develop effective pedagogies that work, and be inventive and resourceful in the classroom. This enables teachers to make up for gaps in professional training knowledge or received methodology, and find more locally relevant and workable pedagogies, frequently consistent with constructivist pedagogies that emphasize meaning-making and problem-solving. Case studies of teachers demonstrate the invention of bilingual strategies, code switching and drawing on contextual knowledge to teach science in English-medium schools in situations that are effectively English as Second/Foreign Language (ESL/EFL). Conviction that the nature of science is practical, applied and related to experience, are cited as important in negotiating new terrain (Yerra and Sarangapani, 2019). Another research study followed a teacher who, after years of working with the Hoshangabad Science Teaching Programme, continued to find ways to make science learning experiential and engaging. The teacher was a 'bricoleur' engaged in 'situated contingent and collaborative pedagogical improvisation' in order to negotiate between the changed expectations of supervising offices and his own convictions (Sharma, 2008:813).

Many teachers, particularly older ones, were not ready to give up corporal punishment, and believed that fear is necessary to instil seriousness and engagement among students, in the absence of which students may develop a casual culture (Tiwari, et al 2019). With increasing experiences of inclusion in schools, teachers expressed anxiety about not being able to handle unruly children or having problematic relationships with community (Nawani, 2013).

From the teachers own point of view, what defines and enables their professionalism are autonomy, self-regulated ethical practices, collegiality and community, and local recognition and respect. Their professionalism often



Below: A teacher invites a student to answer a question written on the blackboard. RKJ.S.N.S.N.M. Inter College, Uttarakhand, India.

From the teachers' own point of view, what defines and enables their professionalism are autonomy, self-regulated ethical practices, collegiality and community, and local recognition and respect



Government school teachers felt demotivated when their efforts were not recognized by visiting and supervising officials

manifested in small ways such as being punctual in rural schools – which indicated self-discipline and ethics – even where there was limited or no community interest or administrative oversight (Khora, 2011). Autonomy, or rather the lack of it in private schools, and management disregard of teachers' views on what was the right thing to do for students, were reported as frustrating experiences by many private school teachers. Although they were not burdened with non-teaching workload, these teachers felt that management did not respect or value their professional judgment (Latha, 2020). Government school teachers felt demotivated when their efforts were not recognized by visiting and supervising officials (Majumdar and Mooij, 2015). Reflecting on the decrease in visits by inspectors and supervising authorities, experienced government school teachers in Delhi noted that when it was a practice, these visits had given them an opportunity to discuss their educational work with representatives of the system and also get insights into systemic thinking and reform.

Young teachers in particular spoke of the respect and love they received from local communities, enjoying small expressions of this such as bus drivers and conductors who greeted them and added unscheduled stops in their route so that teachers could be dropped off or picked up near their schools (Latha, 2020). Collegiality when present greatly facilitated a harmonious and productive work environment, while the lack of it was detrimental. This particularly affected newly qualified teachers in their first jobs (Latha, 2020). Even if the teacher in her classroom seems to be 'isolated', she is in fact not, being meshed into the local school environment and deeply engaged with and affected by its dynamics.

This is emerging research into what teachers think and believe, what they experience in their organizations in relation to what they do and what they think is valuable and important to do. It is an instructive reminder that teachers need to be thought of as critical, reflective practitioners, and not as technicians or instruments to implement curricula and produce learning outcomes. Recognizing this complexity on the personal, professional and the organizational sides, will enable more meaningful ways to manage teaching and to improve teaching quality.

Reforming pedagogy

Since the 1980s, international aid inflows have focused on supporting pedagogic reform that aims to make teaching more child-centred or learner-centred. Yet most research studies from developing country contexts seem to suggest that child-centred educational pedagogies have not found widespread acceptance and absorption into education systems. and that teachers tend to continue to teach in conventional textbook-centric ways (Guthrie, 2006; Tabulawa, 2013; Schweisfurth, 2013).

Even after two decades of exposure to ideas of child-centred education (CCE), teachers seem to retain significant non-child-centred practices and beliefs (Sriprakash, 2012). The Bhukkal Committee noted in its review of the RTE Act that while children may learn best without fear, 'the ground is not ready to receive this positively' (CABE 2013: 18). It is argued that examinations are perceived as essential by parents, teachers and students in order to introduce motivation and accountability into young children's education through fear of failure. It seems that teachers have either resisted or gamed reform, or else have only superficially taken up the jargon of reform without changing practice. Various possible explanations are proposed for this, some of which are listed below.

THE POOR IMPLEMENTATION DESIGN AND MANAGEMENT AND IMMORALITY VIEW

This view assumes that structures for disseminating new ideas and ensuring their implementation are weak in developing societies. It assumes that teachers resist reform because they do not want to move outside their comfort zone or take on additional responsibilities. It is further assumed that there are no incentives, accountability measures and monitoring to ensure that reform agendas are implemented.

THE IDEOLOGICAL AND PARADIGMATIC INCOMPATIBILITY VIEW

An influential perspective is that the problem is not one of deficiencies and backwardness, but simply that the dominant world view in some societies may favour traditional formalist pedagogies. Rote learning, didactic and authoritative teachers and pupil obedience may be features of traditional pedagogies that societies in general and teachers may not want to give up. Progressive pedagogy, rather than ideology, may be a form of cultural imposition and imperialism, and essentially incompatible with traditional societies. (Guthrie, 2006; Tabulawa, 2013).

THE PEDAGOGY AS CULTURE AND EVOLUTION VIEW

Binaries may prevent us from recognizing that cultures are hybrid, evolving and inherently have multiple strands. Strands of 'progressive' ideas may be found within traditional practices and in indigenous critique and reform, such as the need for making meaning, the importance of relevance of curriculum, enhancing the agency of learners, using local languages and contexts in teaching, etc. Instead of expecting reform pedagogies to stick, there could instead be greater appreciation of hybridity in what teachers do and how they explain and value their own practice. Acceptance or rejection by teachers can also be considered a reasoned response rather than a problem of lack of comprehension of an incompatible world view (Sarangapani, forthcoming).

There is greater acceptance in the professional community that technique alone is not enough to form and change teaching practices, and that it is necessary to engage with what teachers think, believe and understand. There is also greater realization that common sense may not be enough as a basis for teaching, no matter how well-meaning the teacher may be. Common sense may lead to mistakes, and common sense alone may not even provide the resources for a wide range of situations, far removed from one's own personal experiences, that teachers have to deal with. Professional learning, continuous professional development and teachers' own convictions are necessary in forming and reforming their pedagogical imagination. Emerging ideas on supporting pedagogical improvement and change include the following:

- Bringing teacher autonomy and autonomously initiated pedagogical improvement – such as in teacher resource centres – to the forefront (Sarangapani and Nawani, 2017).
- Building professional learning communities for peer exchange, in recognition of the fact that professional learning is social (Thirumalai et al., 2019; Majumdar and Mooij, 2015).
- Using incremental and evolutionary approaches that are suited to the constraints of teachers, with greater regard for context (Johnson et al., 2000).
- Recognizing a broader range of pedagogical alternatives for excellence (Vavrus, 2009).
- Enabling greater reciprocity in relationships (Saigal, 2012).
- Enabling teachers to experience change and the satisfaction of impacting student learning, using their theories of personal teaching efficacy as a filter through which new ideas and innovations must pass (Rizvi and Elliot, 2005).

Below: A student is makes notes as part of his exam prep. Ahlcon International School, Delhi, India.

Opposite page: A teacher helps children identify plants. G. D. Goenka Public School, Ghaziabad, India.





Summary

Teacher-centric practices dominate the Indian pedagogical landscape in both government and private schools, and in most subject areas. These practices are linked to teachers' beliefs about learners, the process of learning, subject matter and the aims of education.

Teachers who are able to address the learning needs of children from underprivileged and marginalized groups are found to have positive attitudes towards their students and think of pedagogy as inclusive communication. They create an environment in which children feel cared for. Perceptions of ineducability, on the other hand, lead to teachers neglecting their students.

Having an academic and collegial ethos in school, and better teaching-learning environments motivate teachers and enhance teaching quality.

Teachers are more likely to change their practices in sustained ways when professional development engages with what they believe, and when they experience the satisfaction of seeing their students learn.



A teacher addresses her colleagues during an in-house training session.
RKJ.S.N.S.N.M. Inter College, Uttarakhand, India.



CHAPTER 5

Pre- and in-service professional training

The chapter reviews the landscape of teacher education to identify core concerns in teacher supply and teacher education quality. Analysis of the Central Teacher Eligibility Test (CTET) shows areas in need of curriculum improvement.

5 Pre- and in-service professional training

Teacher education is critical to both teacher and teaching quality. Early policy recommendations pinpointed areas that needed to be improved or changed. Schemes such as the Centrally Sponsored Scheme for Teacher Education (CSSTE) and the Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT) have directed state support to the pre-service sector which has been largely shaped by private, self-financed institutions. Since the 1990s, mission-mode programmes have focused on in-service teacher education which is now being shifted to technology platforms. After the passing of the Right to Education (RTE) Act 2009, the centre and the states have introduced teacher eligibility tests (TETs). Based on the recommendations of the National Policy on Education 1986, structures for continued support and supervision of teachers have been put in place and operationalized through the District Primary Education Programme (DPEP) and Sarva Shiksha Abhiyan (SSA). This chapter begins with the current status of initial and continuing professional development of teachers. Next, through an analysis of the Central Teacher Eligibility Test (CTET) question papers, it critically considers the expectations of teacher eligibility tests. It ends with a brief commentary on the functioning of existing support structures for teachers, and their potential for further strengthening.

The Indian state has long recognized the importance of teachers and the need for strengthening teacher education. The first education commission of post-independence India, popularly referred to as the Kothari Commission, famously began their report with the statement '(t)he destiny of India is now being shaped in her classrooms' (Government of India, [GOI] 1966: 1). Since then, several national policies, commissions, state programmes and schemes have sought to provide direction to the sector by establishing new institutions and strengthening existing ones. After the introduction of the National Policy on Education (NPE) 1986, the National Council for Teacher Education (NCTE) became statutory, new district institutes of education and training (DIET) were established, the state councils of educational research and training (SCERT) and education departments at universities were strengthened, and distance education programmes for teacher education were discontinued.



Below: Teachers at an in-service training session aimed at promoting inclusive and equitable quality education for all. Ahlcon International School, Delhi, India.

Today, the landscape of professional development includes pre-service teacher education programmes for primary/elementary and secondary/senior secondary school teachers offered by colleges and institutes that may be government-run, aided, and private unaided or self-financed. A few institutes also offer programmes for training special education teachers – regulated by the Rehabilitation Council of India – vocational education teachers and early childhood educators. There is also a large infrastructure of institutions and programmes that design and deliver In-service Education for Teachers (INSET) or continuing professional development (CPD). These include block and cluster resource centres (BRCs and CRCs), and now, technology platforms, notably the Digital Infrastructure for Knowledge Sharing (DIKSHA). All of these are funded by centrally sponsored programmes. CPD has also seen growth and the involvement of several non-government organizations. With the Indian schooling system having, by and large, crossed the infrastructure and access milestones, teacher education initiatives now occupy centre stage.

The pre-service teacher education landscape

Pre-service teacher education (PSTE) in India goes back about 150 years and has its origins in the colonial period (Kumar, 2014; Sarangapani, Jain and Razzack, forthcoming). The complex ecosystem of PSTE providers in the country includes university departments of education and special education, aided and self-financed colleges affiliated to various university departments, DIETs, and self-financed colleges offering Diploma in Elementary Education (D.El.Ed) programmes evaluated by senior secondary school boards. This is summarized in Table 5.1.

TABLE 5.1
The institutional ecosystem of pre-service teacher education in the country

University departments of education/special education	Located in the university space where the faculty is expected to publish and pursue research, these initial teacher education (ITE) sites have the potential to offer more rigorous, research-based teacher education programmes. Most offer B.Ed. programmes for secondary teacher preparation. Delhi University also offers a Bachelor of Elementary Education (B.El.Ed) programme. These university departments usually offer Master of Education (M.Ed.) along with doctoral programmes in education. Some universities have departments of physical education as a part of the faculty of education, and a few departments offer early childhood education teacher education programmes. A few departments offer M.A. programmes in education. The universities range from central, state, deemed and private with varying availability of resources. Some government-funded universities received grants from the CSSTE to upgrade into Institutes of Advanced Studies in Education (TISS, 2017).
District institutes of education and training (DIETs)	DIETs were a direct outcome of NPE 1986, and offer the two-year D.El.Ed. course for preparing elementary school teachers that is now becoming the standard national model. DIETs are under the SCERTs of their respective states, and receive funding from the CSSTE. At present, there are 600 DIETs across the country (Azim Premji University [APU], 2021). They provide two-year PSTE and in-service programmes for elementary school teachers. The revised guidelines for DIETs suggest that they primarily focus on in-service teacher education at all levels and continue to offer PSTE only in states that have shortage of professionally qualified teachers.
Aided institutions (older establishments) offering B.Ed. and D.El.Ed.	Some state governments gave grant-in-aid towards faculty salary to private institutions run by philanthropic/non-profit bodies. Since the 1990s, no additional institute has been granted aid but states continue to support most of the existing ones. These are small in number. Even in the state of Karnataka – which reportedly has a larger proportion of aided institutions – only 59 out of the 446 B.Ed. colleges are aided (Joint Review Mission [JRM] report, 2014). A majority are linked to schools and operate in composite/multidisciplinary environments.
Stand-alone self-financed institutes offering B.Ed. or D.El.Ed.	These institutes, running on fees collected from students, constitute the majority, with 64 per cent of the 15,464 private teacher education institutes offering a single B.Ed./D.El.Ed. programme. Most are stand-alone institutions. Malpractices are known to be rampant, diminishing the integrity of mainstream pre-service teacher education and the validity of professional certification.[18] The inability of NCTE to check this so far led to the Justice Verma Commission.

Source: CETE research team's compilation based on data from NCTE, 2020; RCI, 2020; JRM reports, 2014; APU, 2020; TISS, 2017.

[18] For a recent report on malpractice in staffing and staff contracts and remuneration, curriculum (including attendance and internship related), and basic infrastructural facilities see Research Group, Azim Premji Foundation (2021).

In the last three decades, the sector has been highly regulated after NCTE – the regulatory body – was made statutory in 1995. The sector had been struggling with the proliferation of correspondence courses leading to B.Ed. degrees, until the NCTE was able to put regulations in place to check this. However, since then, there has been a ten-fold increase in the number of private, self-financed teacher education institutes in the country in response to the unabated – and perhaps also increased – demand for teaching qualifications, and relatively small growth in government-funded departments. The growth of private institutes has coincided with economic liberalization and privatization (Batra, 2012; Sharma, 2019; Ramchand, 2020). The total number of teacher educational institutes (TEIs) recognized by NCTE in 2020 was 16,754, 92 per cent of which were run by private institutions, and were stand-alone TEIs, that is the only programme they offered was teacher education (NCTE, 2020). Today, state-run institutes and institutes receiving government aid (including departments of universities and aided colleges) constitute less than 8 per cent of the total providers. Regulation has largely taken shape around the need to stem poor quality on account of commercialization. However its effectiveness in curbing corruption and enabling quality has been limited (Government of India, 2013).

Preparing teachers to meet school curriculum needs

Schools need teachers with a wide range of academic and professional training, suitable to the level they teach or the age group of their students, and the prescribed school subjects. Till date, the system of teacher preparation in India is broadly organized around the school stages: ECE, primary, middle (or taken together as elementary), secondary and senior secondary, and school subject areas/types of teachers (generalists or specialists), roughly mapped onto the eligibility qualifications for teaching positions at the various school levels. Arguably, even this listing of specialist/subject requirements may not be adequate to address the full diversity of school curricular subject areas – especially with the inclusion of vocational education subjects, and new subject areas such as computational thinking.



From the diversity of levels and grades across school types (see Figure 2.1 in Chapter 2) along with variations in school size, it is evident that staffing schools, so that all subject needs are met while ensuring adequate workload, is a complex and non-trivial task. Moreover, estimating requirements and meeting the demand for subject teachers through new recruitment is highly complex. No state seems to have a systematic method of estimating subject-wise requirements, and Unified District Information System for Education (UDISE) data does not capture this information. The National Education Policy (NEP) 2020 proposes school complexes as a means of ensuring the availability of the entire range of required specializations. However, its proposed restructuring of school levels into foundational (3- to 8-year-olds), preparatory (8- to 11-year-olds), middle (11- to 14-year-olds) and secondary (14- to 18-year-olds) also brings in its own share of complexities.



Above: A teacher assists primary school children during an art session at a government school. Gurukul Vidya Niketan, Uttarakhand, India.

Opposite page: A teacher studies modules and lessons on best practices for upskilling. Ahlcon International School, Delhi, India.

TABLE 5.2

Types of teachers in the system: by level, subject area and qualification

Level	Commonly used names	Nature of preparation: generalist/specialist and specializations	Teacher education programme*	Entry level academic qualification (basic)
Entry-level academic qualification (basic)	Nursery teacher, *balwadi* teacher	Generalist (language, mathematics/early literacy, numeracy)	Nursery teacher	Secondary or senior secondary
Primary	Primary school teacher	Generalist (math, language and environmental studies)	D.El.Ed. B.El.Ed.	Senior secondary
Primary	Special education teacher	Generalist with specialized knowledge of inclusion	B.Ed. (Special Education)	Undergraduate
Middle school subject teaching	Subject teacher	Specialization in one or two of the following curricular areas – mathematics, languages (one of the modern Indian languages), science (usually segregated as physical – physics, chemistry, and biological– botany, zoology), social sciences (sometime additionally segregated into history, geography and civics, and further into political science, economics, etc. based on +2 subjects)	D.El.Ed. and B.El. Ed. (included)	Senior secondary
Middle school (Grades 6, 7 and 8)	Subject teacher, trained graduate teacher (TGT)		B.Sc.B.Ed./ B.A.B.Ed.	Senior secondary
Secondary school (Grades 9 and 10)			B.Ed.	Undergraduate in relevant subject area
Senior secondary school (Grades 11 and 12)	Subject teacher, postgraduate teacher (PGT)			Postgraduate in relevant subject area
			M.Sc.-Ed.	Undergraduate in relevant subject area
Across levels	Physical education teacher	Physical education (P.E.)	C.P.Ed., D.P.Ed., B.P.Ed.	Undergraduate in P.E.
	Art teacher	Visual arts (V.A.)	B.V.A.Ed.	Undergraduate in V.A.

*See Table 5.3 for full forms and more information.



The distribution of TEIs across the country is very uneven. Assam has 101 TEIs with a total intake of 9,840, while Maharashtra has 1,098 institutions with an intake of 92,855

B.Ed. and D.El.Ed. constitute the bulk of programmes offered and prepare middle and secondary school subject teachers, and primary school generalist teachers. Half of these programmes comprise a two-year diploma in education for preparing elementary school teachers. The rest offer a B.Ed. degree, the duration of which was increased from one to two years in 2014. Some institutes, including the five Regional Institutes of Education run by NCERT, offer a four-year concurrent model of teacher preparation, integrating subject specialization and education studies. Delhi University initiated a unique, four-year integrated B.El.Ed. programme, aimed at aspiring elementary school teachers, that has been offered from composite undergraduate colleges for the last three decades. Around sixty institutes across the country currently offer the B.El.Ed. programme.

The distribution of TEIs across the country is very uneven. Assam has 101 TEIs with a total intake of 9,840, while Maharashtra has 1,098 institutions with an intake of 92,855 (NCTE, 2020).

The pre-school teacher qualification and teacher education programmes are currently not covered under any mandatory regulation. Seeking NCTE recognition for such programmes is optional. The bulk of the programmes on offer are from private providers. The NCTE-recognized diploma in pre-school education is offered in only 204 institutions across the country. There is no public database to understand this sector. There are twenty-eight diploma programmes, offered mostly by private institutions, in the performing/visual arts, and over a thousand diploma and bachelor's programmes in physical education. The latter is a sector that is now growing in popularity.

TABLE 5.3

Pre-service teacher education programmes recognized by the NCTE

Programme type	Duration (years)	Number of recognized programmes on offer	Total intake
Diploma in Pre-school Education (D.P.S.E.)	2	204	11,430
Diploma in Elementary Education (D.El.Ed.)	2	11,359	701,740
Diploma in Elementary Education (Open and Distance Learning [ODL]) (D.El.Ed. [ODL])	Maximum of 5. (2 academic sessions per year)	6	5,200
Diploma in Arts Education (Performing)	2	18	1,000
Diploma in Arts Education (Visual)	2	10	550
Bachelor of Elementary Education (B.El.Ed.)	4	104	5,950
Bachelor of Education (B.Ed.)	2	9,634	953,660
Bachelor of Education (ODL) (B.Ed. [ODL])	2	43	24,700
B.Ed. (Part-time)	3	11	800
B.A.B.Ed./B.Sc.B.Ed. (Integrated)	4	724	63,770
Diploma in Physical Education (D.P.Ed.)	2	9,795	9,645
Bachelor of Physical Education (B.P.Ed.)	2	633	47,710
Others		210	11,983
Total sanctioned			**1,838,138**
Teacher educator training programmes			
B.Ed.-M.Ed. (Integrated)**	3	30	1,550
Master of Education (M.Ed.)	2	1,292	63,745
Master in Physical Education (M.P.Ed.)	4	174	7,115
Total sanctioned			72,410
Grand total			**1,910,548**

Source: NCTE Annual Report. 2019/20.

Note: Under current regulations, NCTE recognizes fifteen programmes. The annual report does not list what is offered under the 'Others' category. Presumably, it includes programmes such as the one-year certificate course in physical education, the one-year course in nursery teacher training, and those under the 'innovative category' added in the 2005 regulations.

**B.Ed.-M.Ed. has been included under programmes for teachers and for teacher educators.



Above: Civil engineering students conduct a material test as a part of their vocational education training. Mumbai, Maharashtra, India.

Special education

Specialist teachers for special needs, who address the education of children with disabilities, are regulated by the Rehabilitation Council of India (RCI), a statutory body responsible for preparing human resources, including teachers, under the Ministry of Social Justice and Empowerment, Government of India. As of 2021, there are 782 RCI-approved institutes, including nine national institutes focusing on specific types of disabilities. The programmes offered by the institutes range from certificate courses to doctoral programmes (Psy.D.). A majority offer diplomas in special education, and focus on a single disability. Currently 40 per cent of the programmmes are for specialization in intellectual disability, and 30 per cent are for hearing impairment. Two institutes offer two-year B.Ed programmes in inclusive education. The geographic coverage of RCI-recognized institutes is uneven. Uttar Pradesh has the most with 158, followed by Maharashtra which has 94 institutes. Meghalaya has only one (RCI, 2019).

Currently there are 139,419 professionals and personnel registered with RCI. Of the sixteen categories (such as audiologists, speech therapists, hearing aid technicians, rehabilitation psychologists etc.) registered with the RCI, approximately 75 per cent are engaged in special education (www.rehabcouncil.nic.in). To meet the statutory requirements of the RTE Act and Rights of Persons with Disabilities (RPWD) Acts, RCI is facilitating teacher preparation in all settings – inclusive, special, open or home-based – and for diverse roles such as classroom teacher, resource teacher, itinerant teacher or cross-disability teacher facilitators (UNESCO, 2019).

Vocational education

The 2020 State of the Education Report on Technical and Vocational Education notes that '(b)y emphasizing the need for community connect in school and college education, the NEP brings the focus back on experiential learning, provides students with the opportunity to link their education to their everyday lives, and to apply their learning to address local challenges' (UNESCO, 2020: 100). The report points out that a large number of teachers and trainers are required to offer opportunities for vocational education in secondary schools across India. States will have to ramp up opportunities for preparing a pool of teachers and trainers for vocational education.

Currently all pre-school and primary teacher education qualifications programmes have senior secondary school as the entry point and are designed as undergraduate programmes meant mostly for students in the 18–20 age group. Most subject teacher preparation programmes are designed to admit those with undergraduate degrees and the students are mostly about twenty-four years (see Table 5.2) old. The global trend is a greater variety of pathways – either based in the university or involving school-university partnerships – that enables students from more diverse age-groups and educational backgrounds to enter into the profession (see Box 5.1). The NEP 2020 recommends similar diversity in the formats in which teacher education qualifications are offered.

BOX 5.1

International trends in teacher preparation pathways

Internationally, there is a trend towards offering a variety of university-based teacher preparation programmes to accommodate anyone who may become interested in teaching at any point of their academic education or life stage (including shifting careers). These programmes vary in their length and format and have a range of entry-level qualification criteria. Shorter programmes of one to two years' duration are designed for those who have an undergraduate degree at the minimum or mature students, while longer programmes cater to those entering into teaching soon after completing high school. This enables diversity in the teaching workforce and provides a wider range of talent and expertise.

Duration	Country	Name of the programme	Entry-level qualification
11 months, executive-style	United States of America	Master of Science in Education (M.S.Ed.) and Principal Certification	3 years of professional experience in a school + undergraduate degree
1 year	United Kingdom	Postgraduate Diploma in Education (PGDE) for training primary school teachers	Undergraduate degree
		Secondary Teacher Training	Undergraduate Degree + one-year Postgraduate Diploma in Education (PGDE)
		Postgraduate Certificate in Education (PGCE)	Undergraduate degree
	South Africa (Full-time one year, part-time two years)	Postgraduate Certificate in Education (PGCE)	Undergraduate degree
	USA	Masters in Education	Undergraduate degree
	Scotland (UK)	Postgraduate Diploma in Education (PGDE) – Primary and secondary	Undergraduate degree
16 months	Singapore	Postgraduate Diploma in Education (PGDE) – Primary and Secondary School and Junior College	Undergraduate degree (one subject major)
2 years (full-time)	UK	Primary Teacher and Secondary Teacher	Undergraduate degree
	Finland	Masters in Changing Education	Undergraduate degree or equivalent
		M.A./ M.Ed. in Teaching, Learning & Media Education	Undergraduate degree
		M.A. Teaching & Learning	Undergraduate degree
		M.A. Pedagogy and Teaching for Sustainability	Undergraduate degree
	Vietnam	Master of Arts in TESOL (online, with short residencies in Vermont)	Undergraduate degree or equivalent
2 years (part-time, online and offline blend)	Vietnam	Master of Arts in International Education (online, with short residencies in Vermont)	Undergraduate degree or an equivalent
3 years	UK	B.Ed. (Hons) course directed at primary level teaching	High school graduates
3.5 years	Germany	Degree programme in Primary Education. 'L1'	German School Level Exam
4 years	Singapore	Bachelor of Arts (Education) (B.A.Ed.) Bachelor of Science (Education) (B.Sc.Ed.)	GCE 'A' Levels (secondary education) or polytechnic diplomas

Source: CETE. 2021a.

Enrolment trends in teacher education

The system has the capacity to prepare 1.84 million teachers of various types (excluding special education teachers) every year

Enrolment trends and the processes of admission into pre-service teacher education are important indicators of teacher supply and quality.

The norm set by NCTE for admission into any programme is 55 per cent marks in the qualifying examination. For example, to be admitted to the D.El.Ed. programme, a candidate must have 55 per cent marks in the higher secondary examination. Currently there are no mandated entrance test procedures as a part of the admissions process, and states follow different practices. Some states have level aptitude tests to draw up a merit list, based on which seats are then allocated to various programmes in affiliated colleges at the D.El.Ed. and B.Ed. levels. Self-financed colleges often have a management quota. It is a commonplace observation that a centralized admission process leads to delays in starting the academic session. The NEP 2020 has recommended an all-India aptitude test to select students for all teacher education programmes.

RCI conducts an All-India Online Aptitude Test annually for admission to various RCI-approved diploma-level programs. The test was held in 2018 at ninety-eight test centres across the country. A total of 32,432 candidates appeared for the test, competing for 19,706 seats. But only half the available seats were filled. Most programmes appear to struggle to attract students. For example, nearly two-thirds of the available seats for the diploma programme (D.Ed.) in special education specializing in cerebral palsy is vacant (RCI, 2019).

The system has the capacity to prepare 1.84 million teachers of various types (excluding special education teachers) every year (see Table 5.3) . While NCTE maintains data on the number of seats sanctioned, there is no data on how many students actually enrol in the programmes and how many of them successfully complete and earn their qualification. Interviews with teacher educators suggests that approximately 40 per cent to 60 per cent of those enrolled, complete the programmes successfully (APU, 2021). A survey conducted for this report suggests that enrolment in B.Ed. continues to be robust, but enrolment in D.Ed. is shrinking (see Box 5.3). If left to the open market, there may be a decline in the numbers of science and mathematics students enrolling in the B. Ed. programme. A quota approach followed in some states seems to ensure balance between the subject areas. The preponderance of art students in D.El.Ed. programmes should be a matter of concern as it has implications for teachers' subject knowledge in mathematics and science. On the whole, D.El. Ed seems to have more limited prospects and its viability will need to be strengthened. The four-year integrated programme proposed by the NEP 2020 may succeed in this, if there are also commensurable changes in salaries (see Box 5.2 for teacher educators' views on the four-year programme). Enrolments in M.Ed., currently the prescribed qualification for faculty in teacher education programmes, is very low and shrinking. The international trend is towards enabling diverse pathways to enter into the profession, with diverse educational programmes catering to this (see Box 5.1). This recognizes that the decision to join the teaching profession may also be taken later in life, and the education system as a whole will benefit from this diversity of experience and talent. This possibility has also been proposed in the NEP 2020.

BOX 5.2

Teacher educators' opinion on the proposed four-year programme

Less that half of the sixty-one faculty members interviewed felt that an extended teacher preparation programme across levels was essential to improve teacher quality. They expressed concerns over a range of issues, from infrastructure to quality of faculty. Most of them were also concerned about the fate of stand-alone institutions, especially long-standing ones that offered 'good' quality teacher education programmes. Teacher educators from Delhi exposed to the four-year B.El.Ed. programme said that the length of the programme and its curriculum design supported strong teacher formation. However, they said that about 30 per cent of the graduates of the integrated programme do not become teachers. They were of the view that the quality of two-year B.Ed. may be better than the 4-year programme. They were all of the view that it would be desirable to have more than one option/pathway for teacher preparation.

Source: CETE research team.

BOX 5.3

Teacher educator views on admissions, employment, student subject areas and quality

Sixty-one teacher educators from sixty-one teacher education programmes across eight states were interviewed to understand the various facets of teacher education. Their responses regarding admissions, enrolment, student subject areas and quality are summarized below.

Are there sufficient applicants to teacher professional development programmes?

B.Ed. programmes are well subscribed and mostly in high demand in almost all states with sufficient applicants and seats being filled, including for the four-year integrated BSc.Ed. in the case of Karnataka, Special Education B.Ed. in Chhattisgarh, and a mix of open and deputed candidates in Meghalaya and Assam. Delhi and Punjab report reduced levels of intake with a decline in the number of graduates in the case of Punjab.

Teacher educators across states reported that there were insufficient takers for M.Ed., and that seats were going vacant. Teacher educators from three states reported that admissions through the centralized test had improved quality of intake. However teacher educators in Karnataka felt that the admission criteria of marks in qualifying exam and personal interviews did not ensure quality of intake.

Are different subject areas (academic qualifications) adequately represented?

There was a considerable difference between states in terms of academic qualifications – arts, social science and science – of PSTE applicants. In Maharashtra and Karnataka, a fixed quota-based admission into science or social science/arts ensured more or less equal numbers opting for each. In Assam, Delhi and Punjab, 80 per cent or more of PSTE entrants were from an arts background. Jharkhand and Chhattisgarh reported larger enrolments of math and science students, including several with engineering and IT backgrounds. Several states mentioned the lack of applicants for geography or biology. In D.El.Ed programmes in Karnataka, almost 95 per cent of applicants were from an arts background. If filling of seats was left alone without applying quotas, teacher supply in subject areas may become skewed going forward.

What is the quality of students applying for the programmes? What are their gender and socio-economic backgrounds?

The assessment of student quality varied widely. In states such as Maharashtra where admission was through a common entrance test, teacher educators said their students mostly held first class degrees and were confident in subject content. Chhattisgarh teacher educators felt that students from an engineering background had weak content knowledge. A common view expressed across states was that students required considerable work on their communication skills, and needed more self-confidence. Teacher educators from Punjab felt their students lacked passion and did not take their professional training seriously.

There seems to be a very pronounced feminization across all programmes in all states. With the exception of physical education, B,Ed. and certificate programmes, the proportion of women to men in all others was between 70 per cent and 90 per cent. Only in physical education programmes was the proportion reversed, with teacher educators in Karnataka reporting about 70 per cent men in the programme.

Across all states, entrants into PSTE programmes were largely from lower socio-economic groups, and from rural areas. This was more pronounced for D.El.Ed. programmes, while B.Ed. – particularly in Karnataka and Maharashtra – also included students from middle class backgrounds. Teacher educators from Meghalaya and Delhi said that their students were from more mixed backgrounds and included lower-middle classes.

Source: Compiled by CETE research team.





Above: Pre-service B.Ed, (Bachelor of Education) training of teachers. Ranchi, Jharkhand, India.

Opposite page: A candidate meets an interviewer during her recruitment as a primary school teacher. Rajikya Intermediate College, Uttarakhand, India.

Pre-service teacher education curriculum renewal

Following the introduction of the NCF 2005, NCTE initiated the National Curriculum Framework for Teacher Education (NCFTE) released in 2009 with a vision to develop 'humane and reflective practitioners' (NCTE 2009). The emphasis is on a process-based approach that combines theory with contextually rooted and inclusive practice. Curriculum of teacher education programmes is a part of regulation from 2014 onwards. All NCTE recognized programmes must now adhere to the recommendations of NCFTE 2009 (www.ncte.org). However, as the regulatory process exercises oversight in matters of infrastructure and staffing only, curricular standards are not reviewed, and evidence suggests that they are by and large not met (Government of India, 2012a; APU, 2021). On the other hand, the regulatory framework and ethos has discouraged innovation in curriculum design and offering (Batra, 2014; Ramchand, 2021). There are relatively few interventions directed at improving pre-service teacher education quality.

There are very few studies that report on classroom practices of teacher education institutions. A few studies that compare self-reporting of skills learnt or ability to practice as reflective practitioners indicate that student teachers of government institutes feel more confident and consider themselves more competent as compared to private teacher education colleges (Barua, 2015; Sengupta, Hazra and Chel, 2018). Beginner teachers reflecting on their D.El.Ed. programme felt the programme had helped their confidence and taught them to communicate (Latha, 2020). A study of teacher education in a DIET in rural Maharashtra found that students enjoyed classes conducted by faculty who had also taught in schools and had rich classroom anecdotes to share. They felt they learnt most from the internship. The theory content they received however was mostly commonsensical (Akai and Sarangapani, 2017). Research on more rigorously designed programmes report that student teachers from such programmes were more critically aware of challenges of inclusion and their own responsibility in finding strategies to address these issues (Aggarwal, 2014; Batra, 2015). In all cases where a programme is conducted sincerely, it contributes to forming professional identity as well as a professional ethic that is geared towards enabling all children in the class to learn and feel included. However, with the exception of education psychology, most theory is commonsensical in its character, and contributes little to reforming core understandings and beliefs that inform perspectives and attitudes.

The curriculum for preparing special educators is designed by RCI along with a group of experts for each programme. All RCI-approved programmes must follow the mandated curriculum. A curriculum analysis undertaken by NCERT suggests that special education programmes must focus on preparing teachers who can work in inclusive, multi-category classrooms and not specialize in one or two disabilities. The report recommends that specialization should take place at the Masters level. It further emphasizes the need to align the RCI-approved programmes to the school curriculum reform initiative of NCERT and the SCERTs (NCERT, Undated [a]).

The sectoral overhaul requires curriculum and pedagogical revision and renewal in both the mainstream D.El.Ed., B.Ed. as well as the B.Ed. (special/inclusive education) programmes. For the vision articulated in NCFTE 2009 to become a curricular reality, more will need to be done in terms of resources such as textbooks and multimedia resources in Indian languages, as well as faculty development programmes in teacher education. The NEP 2020 further recommends that a four-year integrated teacher education programme be put into place that provides branches to prepare teachers for different levels/subject areas (Government of India, 2020). Such a dual-degree integrated programme is currently under development and is to be implemented soon. The programme is expected to prepare teachers across levels with specialization in a discipline, along with education. Specialized training curricula, to be designed with greater synergy between NCTE and RCI, have been proposed for training teachers to teach children with disabilities at the middle and secondary school levels, with the training delivered during or after pre-service teacher preparation. (NCERT, Undated [b]). Teacher licensing based on testing has been considered as a strategy to signal the knowledge, skills, attitudes and values that are important for teaching, relevant particularly to initial teacher education. The CTET and TET are steps in this direction. The NEP 2020 recommendation of 'professional standards' for teaching and teachers (see Box 5.4) are also indicative of the direction that the curriculum and pedagogy of teacher education need to take, and the outcomes that are desirable to achieve. Based on RTE Act 2009 requirements, the CTET and TET are supposed to be designed to evaluate the knowledge skills and attitudes of teachers.

BOX 5.4

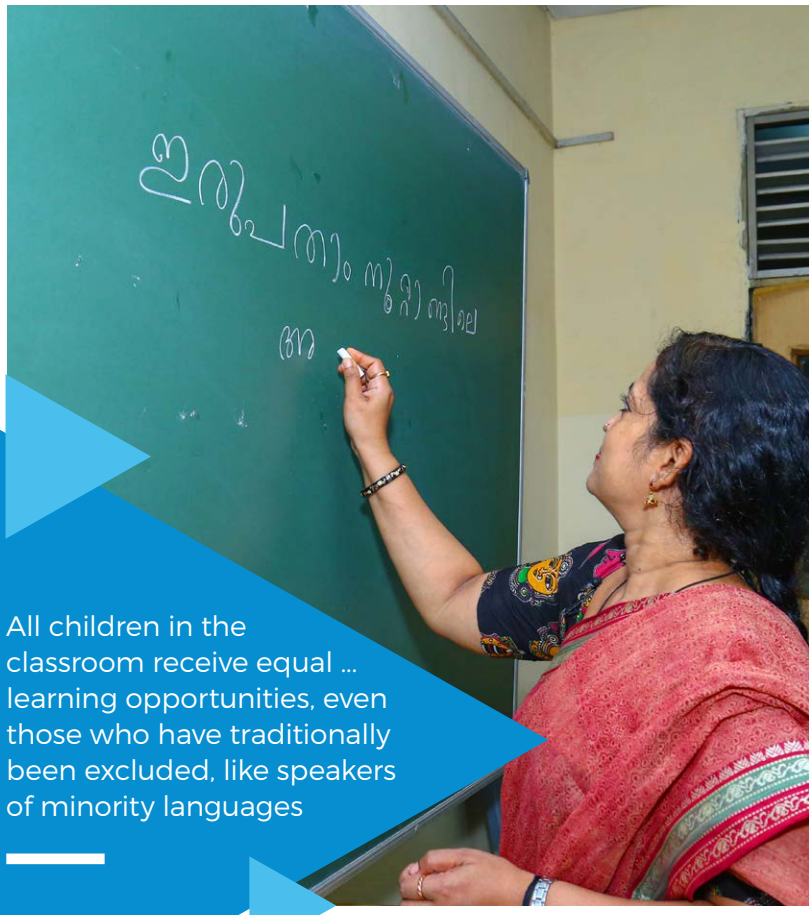
Standards for teachers and teaching

Standards for teachers and teaching are increasingly used globally for certification and licensing and/or offering career growth prospects and professional development. The NEP 2020 recommends the setting up of a professional standards-setting body (PSSB) for teachers and teaching. Many countries in South Asia have set standards for teachers and teaching under state initiatives. The UNESCO framework categorizes standards under the following dimensions:

- knowledge and understanding
- teaching practice
- teacher relations
- professional ethics and conduct for teachers

The review of literature on the impact of standards on classroom practices and student learning shows mixed findings. A meta-review by Burroughs et al. (2019) found limited evidence that standards for teachers impacts student outcomes. Many researchers have pointed out that teacher learning and teaching practices, do not have a linear and straightforward link with student outcomes and achievement, and attempting to capture them through standards can be quite complex (Cochran-Smith, 2002; Boyd et al., 2009; Weaver, 2019). Studies also indicate that standards can narrow the scope of teaching, restrict the freedom of teachers, stifle teacher autonomy, disempower teachers and be seen by the profession as a means of external control (Sachs, 2003; Taubman, 2009; Bourke et al., 2013; Eaude, 2014). Literature indicates that successful school systems across the globe prioritize recruitment, education and recognition of teachers, and provide adequate resources for good quality teaching. Countries like Finland, Singapore and South Korea, which score high on international assessments such as Programme for International Student Assessment (PISA), have been working continuously for the past seven decades to improve the quality of teachers and teaching in their countries. Interviews conducted with experts associated with standards-setting bodies across select countries in the Global South and North also point out that teacher standards cannot exist in isolation and need to be integrated with the larger education system that exists in the country. The value of professional standards for teachers and teaching lie in their productive use as a conceptual reference for professional development of teachers across the spectrum.

Source: CETE. 2021b.



All children in the classroom receive equal ... learning opportunities, even those who have traditionally been excluded, like speakers of minority languages

Above: Inclusive education at Ahlcon International School, Delhi, India.

What teachers need to know and understand

The NCFTE (NCTE 2009) draws attention to certain types of knowledge that are deemed important for teachers.

CHILDHOOD, CHILD AND ADOLESCENT DEVELOPMENT AND LEARNING

Constructs of childhood and adolescence; socialization; language; cognition, thinking and learning; school and physical health; self, identity

INCLUSIVITY

All children in the classroom receive equal, real learning opportunities, even those belonging to groups who have traditionally been excluded – not only children with disabilities, but speakers of minority languages too.

GENDER, SCHOOL AND SOCIETY

Identity development; understanding curriculum and texts from a gender lens; debates about professionalism and feminization of the teaching profession

TEACHER AND LEARNER IN SOCIETY

Issues and concerns of contemporary Indian society; human and child rights; classroom as social context

ASSESSMENT AND EVALUATION STUDIES

Draw upon critical reading of psychometric approaches, sociological frames of analysis and constructive approaches.

It also suggests that pedagogy courses should be broadly designed as languages, mathematics, sciences and social sciences, rather than separate methodologies for each language (say, Hindi) and discipline (say, biology). It largely follows the analysis and categorization of teachers' professional knowledge by Shulman (2013):

CONTENT KNOWLEDGE

This refers to the amount and organization of subject knowledge in the mind of the teacher. Why a given topic is particularly central to a discipline whereas another may be somewhat peripheral.

PEDAGOGIC KNOWLEDGE

Knowledge that goes beyond subject matter to the dimension of teaching a particular form of content knowledge that encompasses those aspects of the content most related to its teachability

PEDAGOGIC CONTENT KNOWLEDGE

Includes an understanding of what makes the learning of specific topics easy or difficult; of knowledge about the misconceptions of students and about the instructional conditions necessary to overcome and transform those initial conceptions

CURRICULAR KNOWLEDGE

An understanding of the curricular alternatives available for instruction as it underlies the teacher's ability to relate the content of a given course or lesson to topics or issues being discussed simultaneously in other classes.

What does the CTET evaluate?

After the passing of the RTE Act 2009, the central government instituted the CTET in an attempt to regulate quality in the profession. The test is conducted in English and Hindi, for both primary school teachers and subject teachers for middle/secondary and senior secondary school, by the central government through the Central Board of Secondary Education and by state governments. The CTET has been conducted since 2011. The results show that, by and large, candidates have a low rate of success in this examination. In 2019, 18 per cent qualified as primary school teachers, and about 30 per cent qualified as subject teachers (in middle and secondary school). Box 5.5. showcases some examples from the CTET examination.



BOX 5.5

Examples of items testing pedagogical content knowledge and knowledge of inclusion
(From Paper 2, CTET, July 2019)

A student is not able to solve those word problems which involve transposition to algebra. The best remedial strategy is to

1. give lot of practice questions on transposition of numbers
2. give lot of practice questions on word problems in another language
3. explain him/her the word problem in simple language
4. explain concept of equality using an alternate method

Which of the following strategies can provide a meaningful explanation of the concept of reflection of light can be given?

1. Animated video on the concept
2. Chart showing the reflection of light
3. Letting learners observe reflection of light on a white paper screen and drawing conclusions
4. Asking closed-ended questions related to the concept

Which of the following statements is correct regarding children coming to school from rural areas, and mathematics?

1. They need not learn formal mathematics as it is of no use to them
2. They may have rich oral mathematical traditions and knowledge
3. They do not know any mathematics
4. They have poor communication skills in mathematics

Several research studies show that teachers have more overall interaction with boys than girls. What is the correct explanation for this?

1. Boys have much more academic capabilities than girls
2. Boys need more attention than girls
3. This is an example of gender bias in teaching
4. Boys are easier to manage than girls in the class

A teacher should

1. maximize comparisons amongst students
2. promote students belonging to certain cultures
3. ignore cultural differences and diversity amongst students
4. communicate that she respects and values all cultures in the classroom

Source: CTET, 2019.

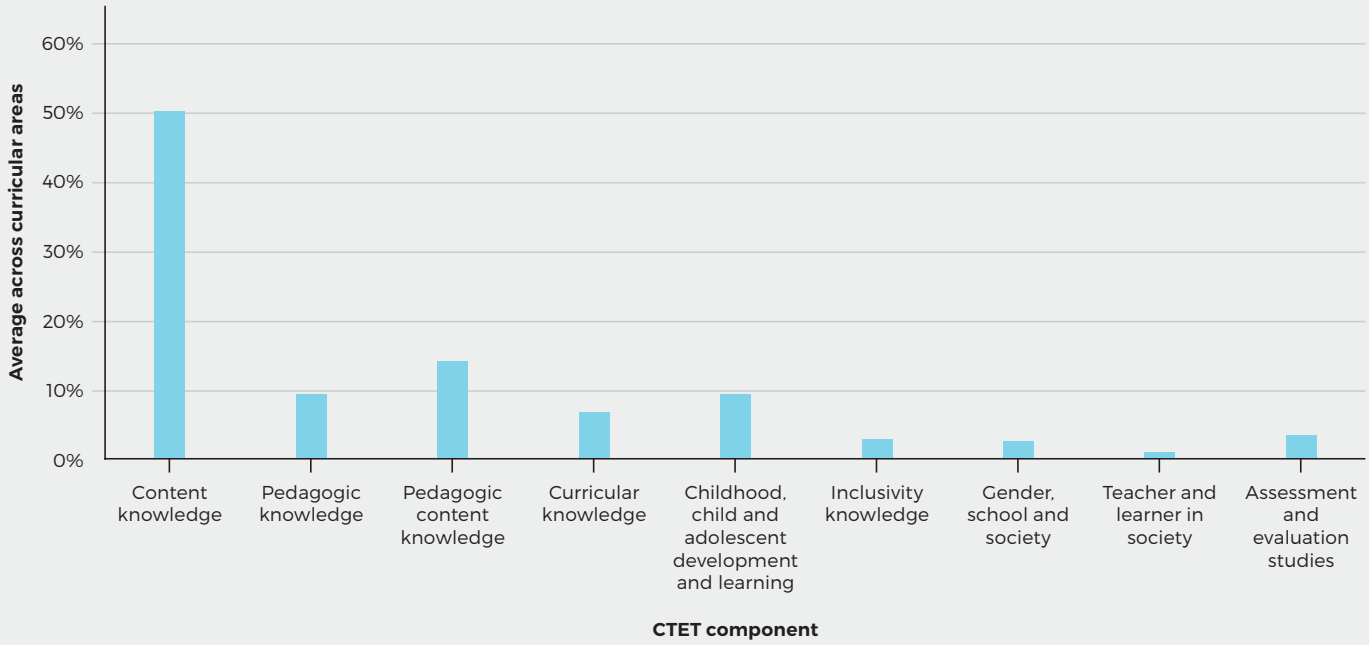
Data from the CTET 2019 cycle (see Box 5.5) shows that both tests for primary and subject school teachers privilege items that test content knowledge (50 per cent of paper 1 and 61 per cent of paper 2). Items testing knowledge of pedagogy and pedagogical content knowledge are limited to about 25 per cent of the paper. The remaining aspects of NCFTE receive very limited attention – less than 3 per cent of each type. The tests on the whole seem to privilege content knowledge rather than professional knowledge associated with and arising out of content knowledge.

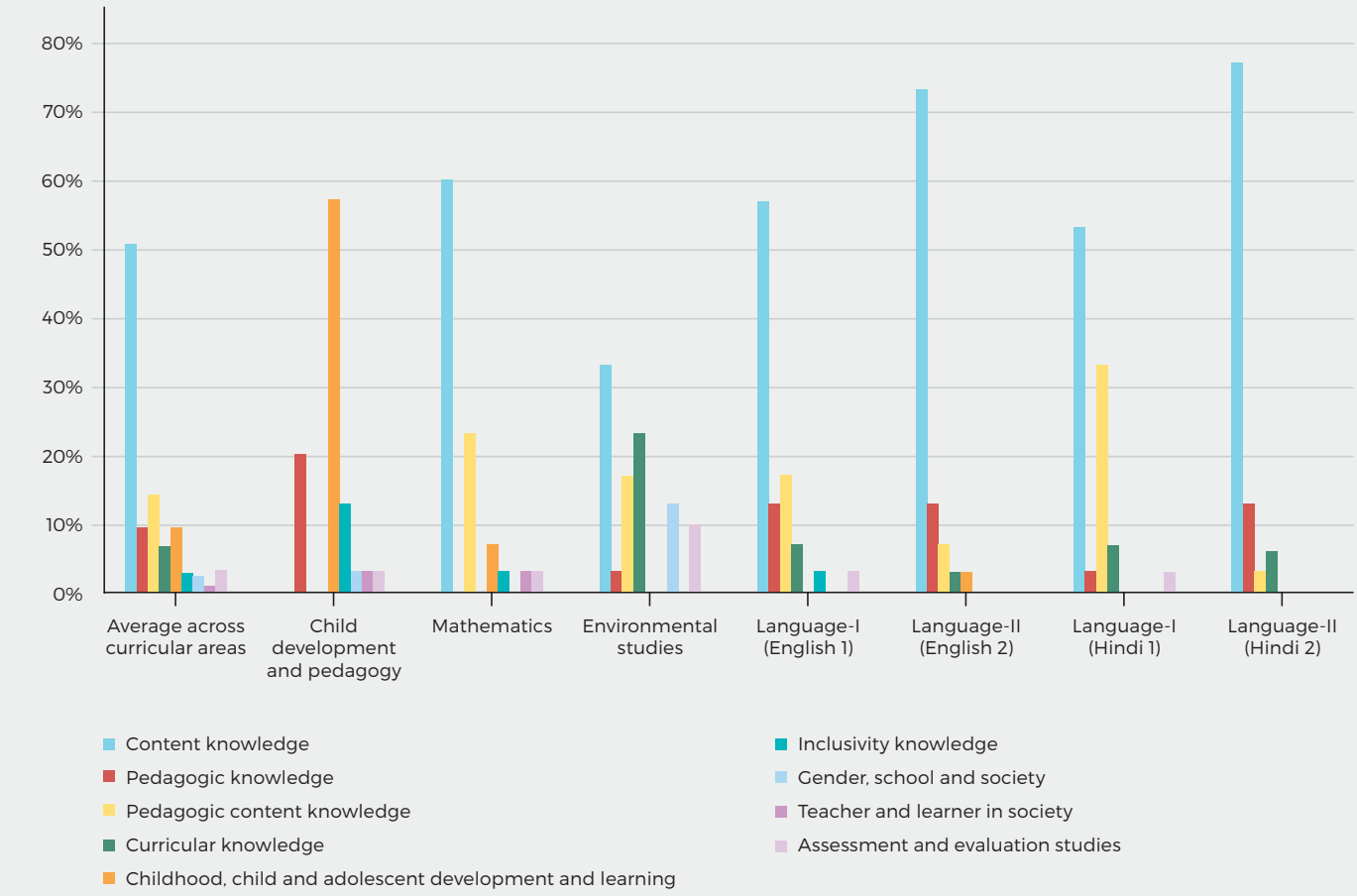
FIGURE 5.1

Analysis of questions from CTET 2019 for primary school teachers (Paper 1) and subject teachers (Paper 2)

Primary school teacher (Paper 1)

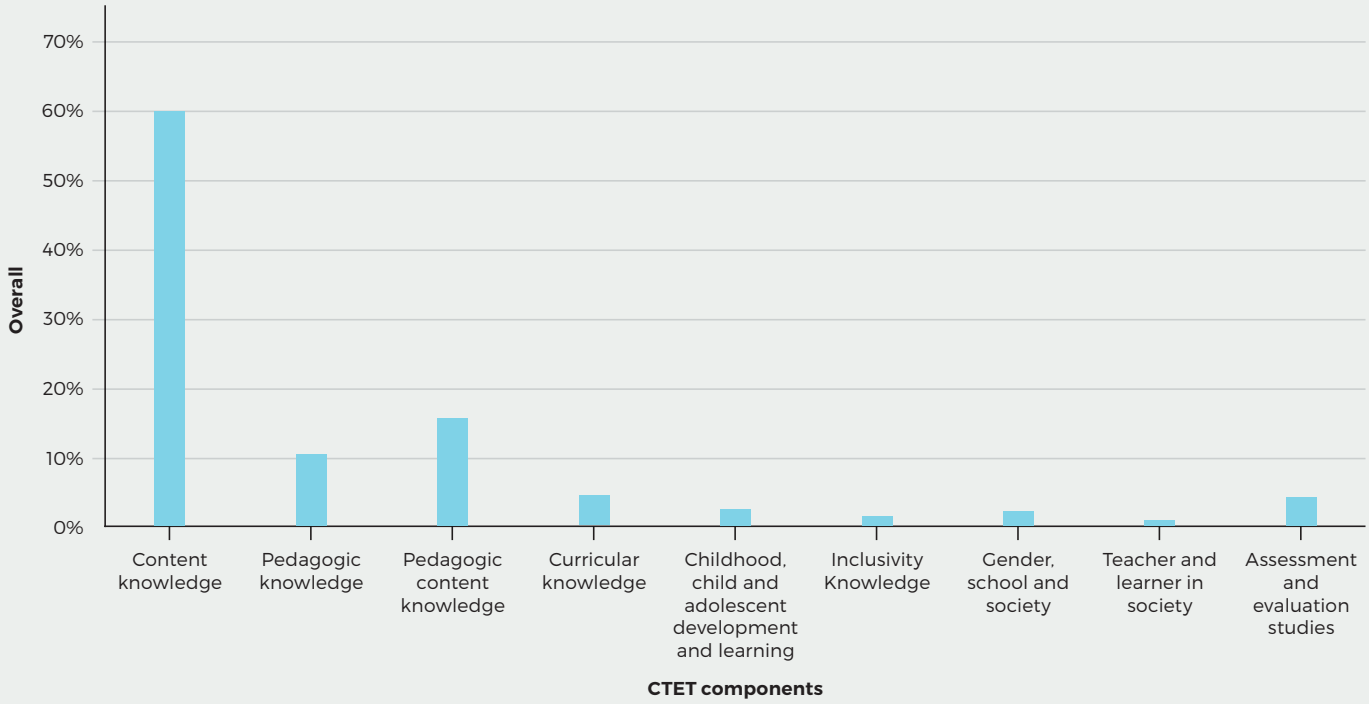
Percentage weightage (overall) of the NCFTE categories in the CTET 2019 question paper.

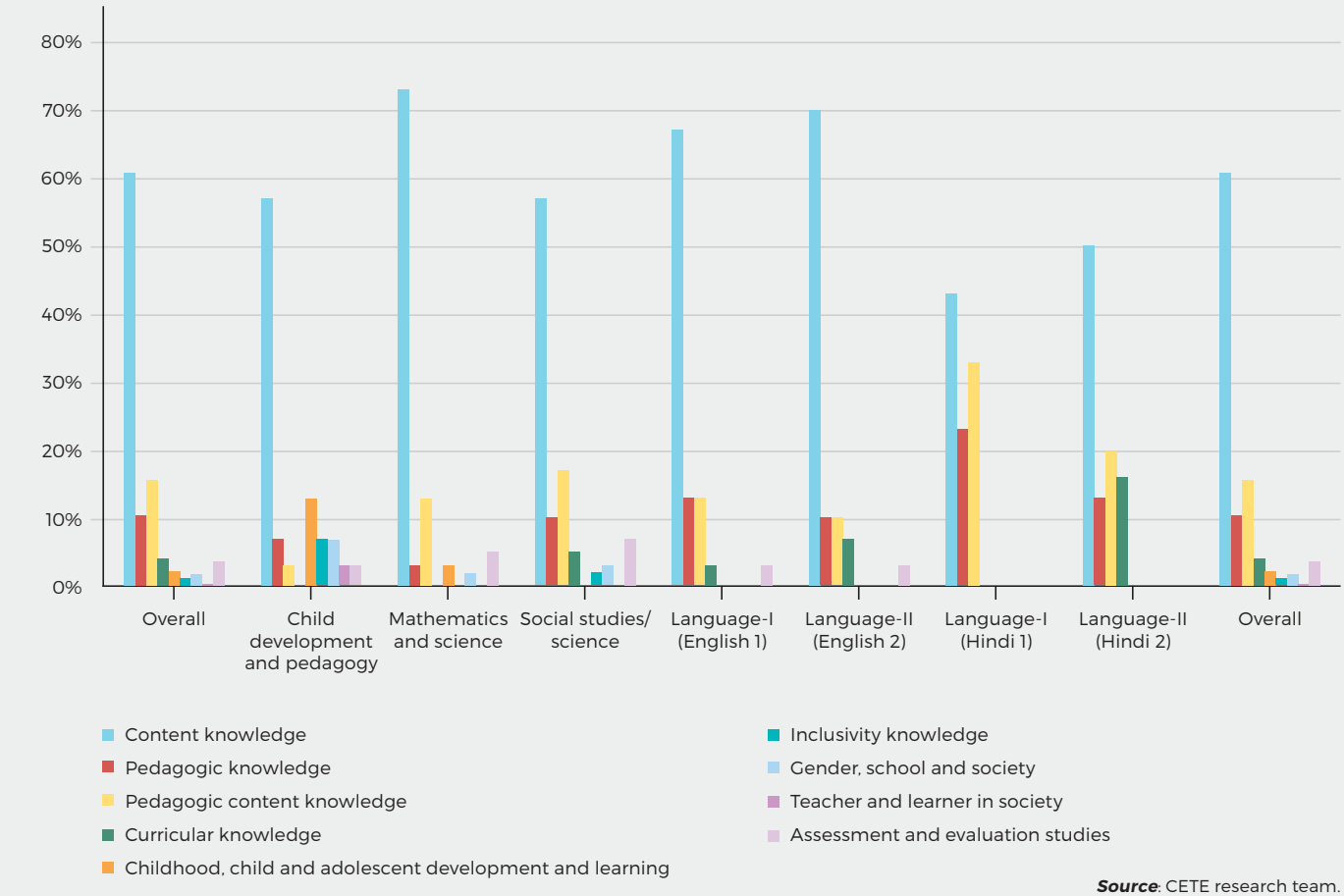




Subject teacher (Paper 2)

Percentage weightage (overall) of the NCFTE categories in the CTET 2019 question paper.





Source: CETE research team.



Above: An all-teacher training meet in progress. RKJ.S.N.S.N.M. Inter College, Uttarakhand, India.

The CTET can also be examined for the breadth of cognitive domains that it assesses, using the Bloom's Taxonomy categories of 'remember, understand, apply, analyse, evaluate and create' (Krathwohl, 2002).[19] In this framework, the tests for primary teachers and subject teachers are found to have items spread over the first four of these cognitive categories: about one third of the items test remembering, between 34 per cent and 39 per cent test understanding, 14 per cent to 21 per cent assess application, and between 12 per cent and 14 per cent assess analysis. In the subject knowledge tests, about 50 per cent items test remembering. Overall, items assessing higher cognitive abilities such as analysis, evaluation and creation are very low (between 3 per cent and 7 per cent).

The CTET design needs to increase emphasis on evaluating more dimensions of teachers' professional knowledge capabilities, rather than primarily assessing content knowledge as the current design does. The test also needs to include an assessment of teachers' knowledge and understanding of constitutional values. The test currently does not evaluate the practice of teaching. Future redesign may need to factor in the assessment of lesson plans by teachers, as well as observation of practice. This is especially so, if the test is to become the basis of teacher licensing.

In future, tests like CTET may need to factor in the assessment of lesson plans by teachers, as well as observation of practice

[19] The revised Blooms' taxonomy (Krathwohl, 2002) provides a framework of six types of distinctive cognitive domains with reference to which learning objectives may be set up.

- **Remember**: Retrieving relevant knowledge from long-term memory
- **Understand**: Determining the meaning of instructional messages, including oral, written, and graphic communication
- **Apply**: Carrying out or using a procedure in a given situation
- **Analyse**: Breaking material into its constituent parts and detecting how the parts relate to one another and to an overall structure or purpose
- **Evaluate**: Making judgments based on criteria and standards
- **Create**: Putting elements together to form a novel, coherent whole or make an original product

Examining how students fare in each of the components of the test, would lead to a better understanding of the strengths and weaknesses of their professional education. Examining the test results in relation to their marks in their academic qualifying examination would help in understanding the overall purposes being served by the CTET. Finally, capturing and analysing information regarding the specific programmes from which the teacher has obtained their qualifying professional degree (not just the affiliating university, but the specific programme which received NCTE recognition) would help in comparing the various colleges and programmes in terms of their success in preparing teachers. This would also provide a better disaggregated understanding of various institutions in which future teachers are being educated, and their internal quality dynamics. The data could also be examined to understand teacher supply in the different subject areas.

Teaching is a purposive, moral and ethical activity and hence this knowledge base must include an addressing of the beliefs, attitudes, skills and competencies of teachers. Teacher education programmes must therefore prepare teachers who can model, teach, and demonstrate the values and behaviours of inclusion and social justice in education (Batra, 2015; Sayed et al., 2016).

Context is crucial in teaching. No single programme can possibly prepare teachers for all the diverse contexts that they may encounter. Hence the importance of reflection and adaptive expertise in professional formation (Darling-Hammond, 2006). A range of government schools, school-based practicum must be integrated throughout the programme, giving a variety of exposure to students, both physically and vicariously (Takker and Ramchand, In Press). In the absence of strong mentoring possibilities during internship, communities of practice (CoP) of experienced teachers along with novice and student teachers, could serve in forging professional identities and perspectives (Wenger-Trayner et al., 2014). Practitioner research contributes to more documentation of professional knowledge that can strengthen the discourse around practice (Rouse, 2010). Teacher education programmes that support formation of CoPs and practitioner research have the potential to prepare teachers who are autonomous and exercise agency.

Below: In-house teacher education programme conducted at Rajkiya Intermediate college, Uttarakhand, India.



Teacher education programmes must prepare teachers who can model, teach, and demonstrate the values and behaviours of inclusion and social justice in education



Above: A teacher participates in continual educational training. G. D. Goenka Public School, Ghaziabad, India.

Continuing professional development of teachers

Continuing professional development (CPD) is the other side of teacher education. As noted by the National Curriculum Framework for Teacher Education, there now exists substantive opportunities and avenues for the continued CPD of teachers (NCTE, 2009). Several central institutions such as NCERT, National Institute of Educational Planning and Administration (NIEPA) and state institutions including the State Institutes of Educational Management and Training (SIEMAT), SCERTs, DIETs and BRCs-CRCs, design and offer CPD. Some higher education institutions such as the Indian Institute of Science Bangalore, Indian Institute of Technology Mumbai, Tata Institute of Social Sciences Mumbai, Homi Bhabha Centre for Science Education, and a number of non-governmental and civil society organizations and CSR funding initiatives offer CPD programmes and are also involved at a smaller scale. More examples of such non-government involvement using technology platforms are provided in Chapter 6 of this report. Barring a few, most initiatives seem to operate with a 'teacher deficiency' assumption, and offer workshops to fill 'the gaps' (TISS-AUD, 2019).

Cascade model of INSET

The primary modality for INSET has been the 'cascaded' training model, in which state resource persons train a group of key resource persons (KRPs), who may themselves train teachers or else in turn further train district-level master trainers who deliver the training. This model, widely used internationally in developing country contexts has also earned a bad reputation. Problems such as 'transmission loss' on account of lack of adequate capacity or lack of agency down the training cascade, as well as lack of scope to contextualize and localize training, affect this model of achieving scale (see Singh et al., 2021). More successful models are designed with greater agency of teachers and localized relevance of content, and may also use a 'cafeteria' approach, with the training schedule being announced well in advance and enabling teachers to select or to be nominated for specific training based on performance appraisals, self-assessments and interest.

In a return to more centrally designed and driven model for INSET/CPD, the Ministry of Education, Government of India, launched the ambitious National Initiative for School Heads' and Teachers' Holistic Advancement (NISHTHA) programme in October 2020 to provide online CPD opportunities to teachers, using the DIKSHA platform. As of June, 2021, 2.4 million teachers are reported to have completed the online training at elementary level (See Case study 5).

CASE STUDY 5

National Initiative for School Heads' and Teachers' Holistic Advancement (NISHTHA)

In India, the National Council of Educational Research and Training (NCERT), under its mandate has been conducting capacity building programmes covering large clientele including teacher educators and teachers in all the states and union territories (UTs) since its inception.

In 2019, NCERT had proposed an integrated teacher training programme for building the capacity of elementary stage teachers in the entire country with an inbuilt mechanism of mentoring and monitoring to the erstwhile Ministry of Human Resource Development (MHRD), now renamed as Ministry of Education (MoE). This design was based on NCERT's own pilot, which it had conducted for the state of Tripura, wherein the council built the capacity of 284 KRPs, who had in turn built the capacity of 31,000 elementary school teachers within three months, conducting the programmes at the block level. Subsequently, the Department of School Education & Literacy, MoE, had launched a national initiative to improve learning outcomes at the elementary level through NISHTHA under the centrally sponsored scheme of Samagra Shiksha in 2019/20.

NISHTHA aims to build capacity of 4.2 million teachers and school heads at the elementary level on learner-centred pedagogies to improve learning outcomes of students, develop social-personal qualities, promoting health-, physical-education- and art-integrated learning, and ICT integration across subject areas. Under NISHTHA, two packages were developed – one with twelve modules for teachers, and the other with 5 modules for school heads. Its target group also includes system-level functionaries at the state, district, block and cluster levels.

The NISHTHA programme was implemented by constituting national resource groups (NRGs) and the state resource groups (SRGs) at the national and the state level respectively. Eight NRGs were constituted, each with fifteen national resource persons (NRPs). NRG was supposed to train around 33,000 KRPs in the state/UT, who would be further grouped into 5,500 SRGs with 6 KRPs in each. Further, each SRG was supposed to build the capacity of 750 teachers by conducting programmes at the block levels.

NRGs were constituted drawing resources persons from the NCERT, National Institute of Educational Planning and Administration (NIEPA), Kendriya Vidyalaya Sangathan (KVS), Childline India and UNICEF. SRGs were constituted from the KRPs drawn from SCERTs, DIETs and also senior teachers at the higher secondary stage.

The face-to-face programme was of five days' duration, in which sessions on all the modules were conducted along with participants' sessions in which participants did their group work, and presented their pedagogic planning for the classrooms in their own contexts. After every session, feedback was taken from the participants, which helped resource persons modify their activities and transactional modalities. A robust portal, or Management Information System (MIS), for delivery of training, monitoring and support has also been developed under 'NISHTHA' for the smooth implementation of this programme.

Through NISHTHA, designed for face-to-face programmes, NCERT could have trained 23,000 KRPs and 1.75 million teachers and school heads by March, 2020. Then, a follow-up was also done with teacher training in more than fifty blocks across the regions. However, due to the COVID-19 pandemic, modules developed for face-to-face NISHTHA programmes were converted into online modules, merging the two modules for teachers and school heads and adding two more – one on Protection of Children from Sexual Offences (POCSO) and the other on COVID-19. The number of modules in NISHTHA is now eighteen. Efforts have been made to orient the remaining teachers via online mode, and training materials and assessment activities were developed accordingly. A pilot was conducted with 250 KRPs of Andhra Pradesh via online mode with interactive sessions on SWAYAM PRABHA TV channel.

Later on, online NISHTHA was launched for the DISKHSHA portal in October, 2020. All the eighteen modules were uploaded on the DIKSHA portal and currently the programmes have been running through the DIKSHA platform. On DIKSHA, as per stated data, more than 2.3 million teachers and school heads belonging to states/UTs and autonomous organizations such as KVS, NVS and CBSE have completed their eighteen online NISHTHA modules till now.

Some of the salient features which helped NISHTHA accomplish its targets are well-designed modules with video support and inbuilt assessment, target groups that include teachers, school heads as well as key functionaries, space for teachers to share their experiences through video and other modes, and collaboration among different organizations in the states/UTs and the centre for the implementation of this programme.

Source: Contributed by NCERT.

Teacher resource centres are at the core of the NEP 2020's vision of the academic and professional pedagogical culture that school complexes can nurture

Despite such a range of offerings, there is very little research on the impact of CPD. Evidence of 'effectiveness' of training programmes and support activities largely remains 'anecdotal and impressionistic' (NCTE, 2009: 64). In one of the few studies that are available, NCERT reports an evaluation of 238 in-service training programmes for various stakeholders conducted over three years (2012–2015) by different constituent units of NCERT. The study reports on planning, processes of implementation, module preparation and submission of reports. It notes that less than two-fifths of the programmes have shared the evaluation and follow-up mechanisms adopted by them (NCERT, 2016).

Samagra Shiksha, which integrates the Centrally Sponsored Scheme of Teacher Education (CSSTE) with SSA and the Rashtriya Madhyamik Shiksha Abhiyan (RMSA), identifies SCERTs as the nodal agency in the state for conducting professional development programmes for in-service teachers. The NEP 2020 however places teacher education in the ambit of higher education. Not only pre-service teacher education in its entirety, but also in-service teacher education will need to be reimagined in this context. There is a logical interest of schools and school education policy in teachers' professional capacity and related professional development. However, imagining the role of higher education in relation to this arena of professional growth could open up possibilities of creating professional development pathways which are accredited and evaluated, and linked to career pathways, as recommended also by NEP 2020. The role of other academic agencies involved with teachers and teacher education, including universities and agencies who are a part of the INSET/CPD ecosystem, can enrich activities in the CPD space. There is also a need for more rigorous documentation and research on the impact of CPD on teachers and in the classroom. As already discussed in Chapter 4 of this report, reforming pedagogical practices is far from easy, and the global experiences give insights into not only the kind of investment and time that are needed, but also the perspective on teachers' professionalism that underlies the INSET/CPD design, to make it 'stick'. Chapter 6 of this report, discussing the use of technology in CPD, also provides more contemporary understanding of successful CPD designs.

Teacher resource centres

Any discussion on CPD will be incomplete without a mention of the role of teacher resource centres, teacher communities and social learning. This is at the core of the NEP 2020's vision of the academic and professional pedagogical culture that school complexes can nurture. Envisioned in the CSSTE revised guidelines (MHRD, 2012), there are several robust examples of functioning teacher resource centres across the country that provide rich examples of what can be institutionalized within the school complex, and how such school-complex-based resource centres can be supported by a resource centre at the district in the DIET (see Box 5.6). A well-functioning resource centre at the DIET – providing not only physical and digital resource access, but also forming a professional community – would not only be able to energize the CPD ecosystem, but also become a hub around which pre-service teacher education in the district can be revitalized and supported. This is richly evidenced in the role played by the District Education Resource Centre at Chamarajanagar DIET since 2005.



Right: A teacher goes through a digital resource guide. Ahlcon International School, Delhi, India.

BOX 5.6

Resource centres, teacher learning centres and material development

Teacher resource centres operate extensively in the non-government sector, often focusing on specific curricular areas. Agastya Foundation, Jodo Gyan, Kathalaya, Deenabandu, Centre for Learning Resources, Dhwani Educational Resource Centre, Suvidya, Pravah, Sethu, Sutradhar, Navnirmiti, and the District Education Resource Centre at DIET, Chamarajanagar are a few examples. Many of these are bottom-up structures, keeping a close focus on working with teachers. They work closely with schools to provide teachers with access to resources, professional fora and support to change pedagogy and adopt more active learning approaches. Most promote a 'pull' rather than 'push' approach to get teachers to visit the resource centre and make use of what is on offer.

The CSSTE revised guidelines outline the vision and role to be played by educational resource centres (ERC) at DIETs. These spaces are expected to serve as enhanced libraries and activity centres, created specifically to make a range of materials and resources required for professional practice available to teachers, teacher educators and district education planners. A resource centre would include reference books, local educational materials, tools and teaching-learning aids, kits as well as resource persons with whom teachers can interact.

The CSSTE envisaged the DIET as a hub of teacher-learning by developing vibrant resource centres and teaching-learning centres. It was envisaged to nurture a professional community of users through the following means:

- promoting an interest in, and a culture of, using the library as a support for teaching and training, for ideas and for materials
- developing a culture of sharing ideas and experiences by contributing teacher-created materials, etc. to the resource centre
- networking the district, block, cluster and school resource centres for effective exchange of ideas, information and resources
- providing academic help and support to resource groups working at district, block and cluster levels in the district
- facilitating teachers in developing and using low cost, locally available educational resources
- providing the district functionaries – CRPs, BRPs, DIET faculty, D.Ed. and B.Ed. students – a forum to interact with educationists, intellectuals, artists, creative teachers, resource persons and resource groups
- Forging links between pre- and in-service teacher education, as envisaged in the NCFTE 2009

Such energized resource centres would serve as spaces to promote and increase the introduction of local knowledge in the curriculum, and develop and use local materials about local historical monuments, flora and fauna, the district's 'problems' (ecological, economic, health, social, etc.), festivals and cultural events, songs, poems, and riddles, folk tales, historical events of significance, craft traditions, etc.

Sources: MHRD, 2012. CSSTE Guidelines 2012: pp. 34–37; Sarangapani, Nawani, Latha and Banga, 2017.



Right: Teachers can refer to the educational resources available locally in public libraries.

Opposite page: A teacher records and shares her online session for internal peer review, as part of a knowledge-sharing exercise. Ahlcon International School, Delhi, India.

Along with robust initial teacher education programmes and meaningful professional development opportunities, the previous chapter indicated the need for support structures for teachers to ensure better quality of teaching. Although the block and cluster resource centres were set-up for this purpose in the 1990s, according to a committee constituted by MHRD to suggest measures to revitalize them, they function suboptimally for a variety of reasons. This report notes the need for different stakeholders to work in close collaboration to support teachers and teaching within schools (MHRD, 2011).



Summary

A large proportion of teacher education programmes in India run in 'self-financed' colleges. Their geographic spread across the country is uneven. There are very few programmes that prepare teachers of special education, vocational education, arts and music.

Admission in B.Ed. programmes seems to be stable, but D.El.Ed and M.Ed. admissions are currently shrinking. Some states see lower admission of students from science backgrounds in the absence of state-regulated admission processes. Quality of intake is high wherever entrance examinations are adopted, but many candidates lack self-confidence and communication skills.

Curricula of pre-service training needs to be further improved and supported with teaching-learning resources in Indian languages. The CTET needs review to ensure that all areas of a teacher education curriculum are adequately represented.

While in-service teacher education is widespread and now incorporates technology, research is needed to understand impact and which models work. There is an increase in the tendency to use technology to centralize design and delivery.



Use of computers in schools makes learning more fun.
Rajkiya Intermediate College, Uttarakhand, India.



CHAPTER 6

Teachers and ICT

This chapter discusses the current status of teachers' knowledge and use of information and communications technology (ICT) in teaching and different approaches in ICT use for professional development. It examines the impact of the COVID-19 pandemic on teachers' employment and working conditions.

6 Teachers and ICT

The possibilities of using Educational Technology (EdTech) by teachers and for teachers' professional development has undergone a revolution in the last decade, and has accelerated in the last three years, preceding, and during, the COVID-19 pandemic. By and large, this has been driven by non-state actors or technologists followed by education bureaucracy. The International Task Force on Teachers for Education 2030, in its strategic plan report 2018–2021, suggested a thematic area on Information and Communications Technology (ICT) and distance education for teacher development. Integrating ICT into pedagogy and curriculum by the teaching community has so far been slow on account of the overall state of access to ICT infrastructure in schools, the issue of relevance to the curriculum, and availability of professional development. These issues are back in focus with EdTech acting as both a part of the solution and a part of the problem of schooling and education in pandemic-stricken India. This is on account of a digital divide in terms of access to devices, electricity and data, as well as competencies to use the medium and resources effectively.



Below: ICT has emerged as one of the key competencies of teachers in the 21st century. Ahlcon International School, Delhi, India.



CASE STUDY 6

Global Teacher Prize winner, Mr Ranjitsinh Disale

USING ICT TO IMPROVE QUALITY AND EQUITY – TEACHER INNOVATION AND AGENCY

Ranjitsinh Disale recognized the need for home language instruction and leveraged technology to create Quick Response (QR) coded textbooks. He embedded content in Kannada, the children's mother tongue into Marathi textbooks. This included audio and video versions of stories and poems, as well as assignments. In order to do this, he learnt the children's language and improved his digital literacy skills through a series of courses he undertook out of his own interest. Disale's redesigned textbooks enabled continued access to education for girl children affected by terror attacks in the village he was teaching in, even when they were made to stay at home. Recognized by the State, he then went on to receive the prestigious Global Teacher's Award of the Varkey foundation in 2020. Ranjit Disale is now an education advisor with the World Bank. Recognizing that peace and education are inseparable aspects of civilization, Disale is also passionate about building peace between young people across conflict zones. His 'Let's Cross the Borders' project connects young people from India and Pakistan, Palestine and Israel, Iraq and Iran, and The United States and The Democratic People's Republic of Korea. Over a six-week programme, students are matched with a peace buddy from other countries with whom they closely interact - preparing presentations and listening to guest speakers together to understand their similarities. So far, Disale has initiated an incredible 19,000 students from eight countries into this programme. Further to this, using the Microsoft Educator Community platform, Ranjitsinh spends his weekends taking students from schools with depleted resources around the world on virtual field trips. His work stems from his personal desire and continuous efforts to improve himself in order to make a difference in the field of education.

Source: Contributed by Ranjitsinh Disale Foundation.

ICT use by teachers and for teachers' professional development

The National Education Policy (NEP) 2020 formulates a vision of EdTech that is pervasive in the system – used for administrative efficiency, greater transparency and accountability, and also integrated into pedagogy and evaluation, the core processes of education. ICT@School, a scheme of the central government rolled out from 2004 onwards, had begun bringing computing labs to schools, and offered digital literacy to students and teachers in government high schools. However, UDISE 2019/20 reveals that its reach is still low with only 38.5 per cent of schools having computers and 22.3 per cent of schools having an Internet connection. Since 2012/13, the National Repository of Open Educational Resources has been curating a vast collection of digital resources relevant for educational use (https://nroer.gov.in). The NEP 2020 vision draws on revolutionary changes in ICT over the last decade – in terms of devices, Internet connectivity, computing architectures and experience – that enables working at large scale, with interactivity, processing large volumes of data relevant to teachers in classrooms and school leaders and educational administrators at district, state and national levels. Some states have been early adopters of EdTech. Kerala has been a frontrunner, adapting and localizing the ICT@School scheme with teacher involvement, and adopting free and open-source software (FOSS) instead of proprietorial software (https://kite.kerala.gov.in). Karnataka's Subject Teacher Forum is a pioneering initiative to build ICT-enabled teaching communities who create, curate and share open educational resources using wikis and email groups (https://karnatakaeducation.org.in).

Digital Infrastructure for Knowledge Sharing (DIKSHA), a national portal launched in 2017 represents the most massive effort by the Ministry of Education (formerly Ministry of Human Resource Development), Government of India, to infuse and integrate EdTech in teaching-learning and professional development across all states of the country.[20] The focus has shifted from infrastructure and hardware for ICT labs in schools, to infrastructure for hosting and providing access to teaching-learning resources in multiple Indian languages. Its primary beneficiaries are students and their teachers. Most of the 548,477 resources hosted on DIKSHA, as of August 2 2021, are 'student-facing'. The portal hosts about 3,629 courses or resources for teachers' professional development (see Case study 7).

Below: A teacher training workshop in progress. Teachers have made every effort to adapt to a changing learning environment. Ahlcon International School, Delhi, India.

[20] https://merge.diksha.gov.in/about/



Teachers' own empowerment and ability to use ICT is important

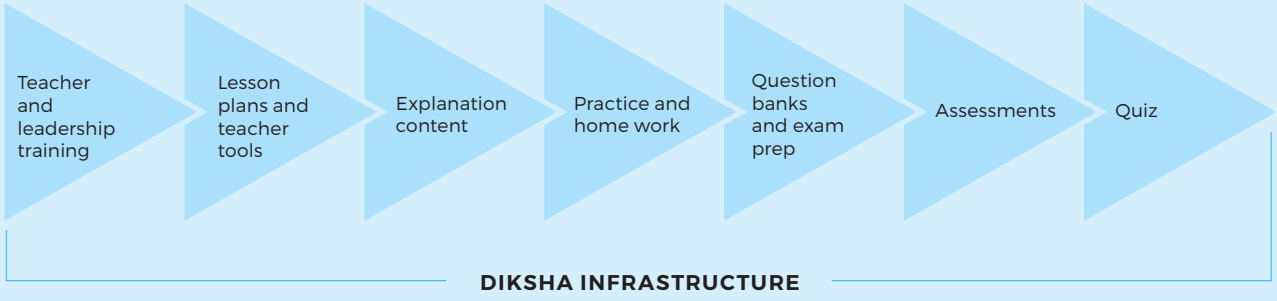
CASE STUDY 7

DIKSHA

DIKSHA is available for use by all states and union territories of India, each of whom has the freedom to use the platform's varied capabilities and solutions in its own way, to design and run programmes for their teachers and learners. DIKSHA policies and tools make it possible for the entire education ecosystem, comprising educationists, experts, and institutions – government, autonomous, non-government and private – to participate, contribute and leverage a common platform to achieve the country's learning goals at scale.

Student-facing resources on DIKSHA are mostly in the form of digitized textbook content, short videos and PDF worksheets. Many of these have been created by teachers through state workshops on curation and resource creation, in a concerted effort to promote greater ownership among the teaching community and relevance to their teaching contexts. Several of these resources are linked via QR codes to topics in textbooks, making them accessible directly to students via mobile phones.

Launched as a portal for teachers, DIKSHA also has professional development resources and courses. The 3,629 courses currently hosted are offered mainly in Hindi and English, but also in Assamese, Bengali, Gujarati and Marathi. Topics include experiential learning, National Initiative for School Heads' and Teachers' Holistic Advancement (NISHTHA) training modules, digital literacy, pre-school education, assessment, subject pedagogy courses, and health and well-being. As of 2 August 2021, there were over 100 million enrolments with 85.44 million completions.



Source: https://merge.diksha.gov.in/about/ (accessed 2 August 2021.)

Although there is enthusiasm about the possibilities of ICT in enabling the education system to overcome inequalities of access to quality, a study by the Organisation for Economic Co-operation and Development (OECD) finds that converting access to ICT devices and resources to learning outcomes is not automatic. 'On an average in the past 10 years there has been no appreciable improvement in student achievement in reading, mathematics or science in the countries that invested heavily in information and communication technologies for education. … To deliver on the promises technology holds, countries will need a convincing strategy to build teachers' capacity. And policymakers need to become better at building support for this agenda' (OECD, 2015).

To deliver on the promises technology holds, countries need a convincing strategy to build teachers' capacity

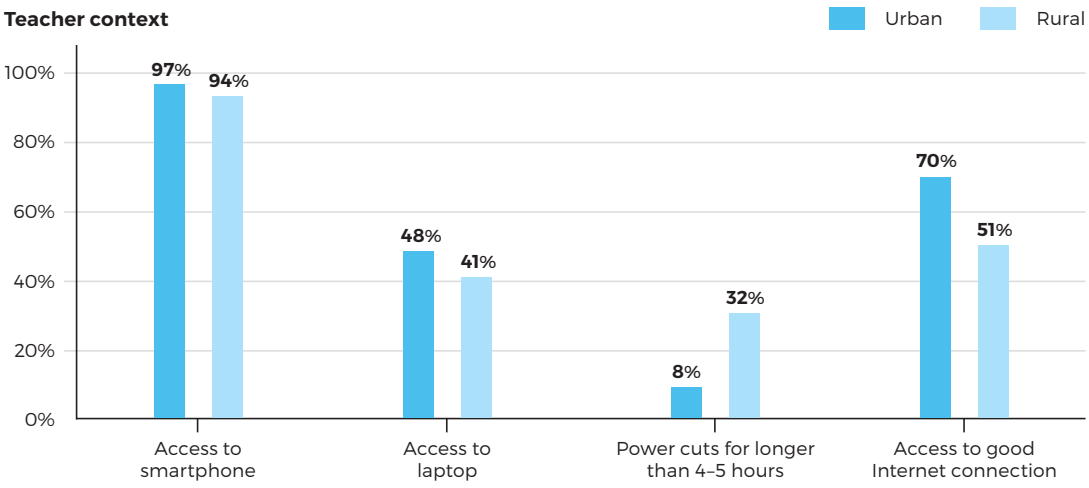
Teachers' own empowerment and ability to use ICT is important. However, this raises questions about the nature of access to devices and data, how prepared teachers are to access and integrate ICT in a meaningful way in their practice, and the kind of ICT-based resources and professional development opportunities that are currently available to teachers.

Access to devices and Internet

Most studies report a high level of access to smartphone devices among government and private school teachers – close to or above 95 per cent – in both rural and urban areas (see Figure 6.1, Chandran and Roy, 2017).

FIGURE 6.1

Urban-rural differences in access to devices, electricity and Internet among private and government school teachers



Source: Assessment of ground preparedness for EdTech, Round 3. Connected Open Online Learning, Tata Institute of Social Sciences, May 2020.

97 per cent men teachers and 95 per cent women teachers own smartphones but more women teachers (67 per cent) than men (56 per cent) have access to a computer at home

However, access to laptops is only between 50 per cent and 60 per cent (see Figure 6.1; Singh et al., 2020; Chandran and Roy, 2017). About 76 per cent of government school teachers report having access to internet on their phones (Chandran and Roy, 2017).

- State to state differences in access to smartphones are only slight, given overall high access – 100 per cent in Mizoram, and 94 per cent in Telangana (Chandran and Roy, 2017). However, there is wide variation among states in teachers' access to Internet – 100 per cent in Mizoram, 71 per cent in Telangana. Wide variations also exist when it comes to use of applications such as WhatsApp – 100 per cent in Mizoram versus 63 per cent in Rajasthan. (Chandran and Roy, 2017)
- Urban-rural differences in smartphone access is negligible – 97 per cent versus 94 per cent (Singh et al, 2020). However, there exists a rural-urban divide in access to the Internet, with only 51 per cent rural teachers reporting good internet connectivity versus 70 per cent urban teachers (Singh et al., 2020).
- In terms of gender, 97 per cent men teachers and 95 per cent women teachers own smartphones, but more women teachers (67 per cent) than men (56 per cent) have laptop or desktop computers at home (Chandran and Roy, 2017), (56 per cent versus 38 per cent according to Singh et al. [2020]). This may be because households with women teachers are likely to be double income (see Table 6.1).
- No differences in smartphone ownership was noted by age group – above 96 per cent for all, but access to the Internet was lower among older teachers – 61 per cent for those aged fifty and older, as opposed to between 78 per cent and 81 per cent for teachers less than forty-nine years of age. Laptop ownership was highest (66 per cent) among teachers aged between forty and forty-nine years versus about 53 per cent for those aged fifty and above (Chandran and Roy, 2017). This may be due to having college-going children who use laptops or desktops (see Table 6.1).

TABLE 6.1

Access to devices and Internet by gender and age

	Mobile or smart phone	Laptop or computer at home	Access to internet on phone	Use of applications for group chat
Women	95%	67%	73%	74%
Men	97%	55%	73%	75%
Below 30 years	96%	56%	79%	71%
30–39 years	96%	53%	81%	78%
40–49 years	96%	66%	78%	77%
Above 50 years	96%	53%	61%	64%

>90% 76%–90% 65%–75% <65%

Source: Chandran and Roy, 2017.



Above: Teachers' digital skills have proven very useful during the COVID-19 pandemic. Ahlcon International School, Delhi, India.

Teachers' proficiency in basic and advanced digital use

Between half and two-thirds of teachers report having basic exposure to computers and familiarity with ways of using and consuming digital content on smartphones. However, most do not have skills for creation or production where a computer is involved, or in the use of interactive software, and advanced digital and online skills (Table 6.2).

TABLE 6.2
Knowledge of digital skills

Done without difficulty or help (reported by 50 per cent or above)	Done with difficulty and a lot of help, or never done (reported by 50 per cent or above)
Computer Start a computer (62%); use the English keyboard (66%); handle a mouse (75%); save files (54%); use web browser (56%); download or upload files (54%)	Use a spreadsheet (55%); use presentation software (57%); type in Hindi/Telugu/Mizo (57%); use hyperlinks (66%); program a task (66%); use a simulation (76%); book an online ticket (63%); use a videoconferencing tool such as Skype (67%)
Mobile/smart phone Record audio or video on phone (65%); take photographs with digital camera (63%); download apps on a mobile phone (54%)	

Source: Chandran and Roy, 2017.

Chandran and Roy (2017) report finding that 66 per cent teachers said they had email accounts, the highest being in Mizoram (70 per cent) and the lowest in Rajasthan (53 per cent). 75 per cent overall said they were members of WhatsApp groups for teachers, with the highest in Mizoram (88 per cent) and the lowest in Rajasthan (58 per cent). The overall level of digital citizenship was also low, with 85 per cent of teachers across states saying that they had never lodged a complaint online, filed a form online, or applied for government documents online, or used *e-panchayat*.

Teachers' beliefs and perceptions regarding integration of ICT into teaching-learning processes

Studies on coverage of digital literacy training prior to the pandemic indicate that between 40 per cent and 50 per cent of teachers may have been covered, but with considerable variation between states. Less than half of all secondary school teachers (41 per cent according to a 2017 study by Chandran and Roy) reported having paid for their own training with private providers out of their own initiative.

Most teachers are found to have the positive view that use of technology will support students in improving learning. Chandran and Roy (2017) report that teachers also did not agree that use of technology will have negative effects on students, such as making them lazy. A survey conveyed in the early days of the pandemic also found that most teachers were open to ICT-enabled teaching (Singh et al., 2020).

Teachers are however concerned about their own lack of proficiency, lack of suitable resources and poor infrastructure.

- It was felt by 57 per cent of teachers that using technology was time-consuming. 65 per cent felt that their own limited ability to integrate ICT into their subject teaching posed challenges. 51 per cent of teachers felt that having a separate computer teacher is necessary. In the early days of the pandemic, 63 per cent of teachers expressed concern over the dearth of suitable resources as well as their own lack of knowledge about where to find suitable resources (Singh et al., 2020). 'It's like fighting in a battle without any weapons,' averred a private school teacher from Bilaspur (Singh et al., 2020).
- Teachers also felt that infrastructure and availability of devices and Internet were an issue. 81 per cent brought up the issue of large class sizes, 75 per cent mentioned having not enough computers, 79 per cent mentioned

outdated computers in ICT labs, that crashed frequently, and 83 per cent mentioned poor Internet connections in schools (Singh et al., 2020).

Teachers' experiences of using/integrating ICT in their classrooms

There is relatively limited research on the deployment of ICT in the Indian context. A review of available EdTech, which has been mostly driven by private EdTech companies, largely shows that they are 'student-facing'. With a few exceptions, they are designed for personalized learning and evaluation.[21] Research on EdTech-based interventions in schools points to two distinct types of assumptions regarding the teachers' capacity and role, and, related to this, their experiences.

Below: The use of education technology in teaching methods encourages students to look beyond textbooks. Uttarakhand, India.



It is common for 'student-facing' individualized interactive EdTech to be designed with the assumption that existing teachers are either not there or are deficient and lacking competence, and that student learning needs may be better met by the EdTech offering. One study found that the EdTech intervention had effectively disempowered teachers, as it limited their role to providing technical assistance and minor facilitation, and minding the class (Miglani and Burch, 2019). Such a technician role was also seen in the early phase of EdTech use of TV in classrooms in India, and is also common in the new EdTech phase.

Research also reports that when provided with professional development and appropriate ICT-based resources to integrate into subject teaching, teachers do develop greater agency and self-confidence in promoting active learning. In a longitudinal study on ICT use in secondary school classrooms, teachers with three years of experience – when compared to those with two years of experience or less – reported having more advanced ICT skills, more online ICT engagement and more positive beliefs regarding integrating ICT in teaching-learning. The more experienced teachers also reported a lower perception of hardware problems and facing a lower number of extrinsic challenges. (The Connected Learning Initiative [CLIx], 2020: pp. 33). Opportunities to use ICT and receive professional development seems to contribute to ability and confidence to handle challenges posed by EdTech.

Factors that promote ICT adoption by teachers include professional development, adequate infrastructure, ICT resources that are mapped to the curriculum, opportunity to use ICT and being enabled to adapt and select resources for inclusion, designs that involve all students in activity learning, provision of high quality content in local languages, and school heads and supervisors who are oriented and able to provide school-based support (CLIx, 2020, pp .53). From the teachers' own point of view, professional development and support, along with intervention design that promotes inclusion, interactivity and enables their professional judgement to be exercised, are positive levers for adoption (see Case study 8).

[21] 8 Indian Edtech start-ups to watch out for in 2016, *Business Insider* (2016), http://www.businessinsider.in/8-Indian-Edtech-startups-to-watch-out-for-in-2016/articleshow/50532791.cms (accessed September 30 2021); India's 'Ed-tech' startups face opportunities—And a few challenges, Knowledge@Wharton, University of Pennsylvania (2016). https://knowledge.wharton.upenn.edu/article/indias-ed-tech-startups-face-opportunities-challenges/ (accessed September 30, 2021)

CASE STUDY 8

The Connected Learning Initiative
Making EdTech work for secondary school students and their teachers

The Connected Learning Initiative (CLIx) was awarded the UNESCO King Hamad Bin Isa Al-Khalifa Prize for the Use of ICTs in Education in March 2018 for its outstanding contribution towards using ICT to increase access to quality education. Conceptualized as an action research programme, the initiative designed research-based resources for STEM (science, technology, engineering, mathematics) learning and leveraged technology and online capabilities. Between 2015 and 2019, CLIx activated ICT labs in 385 schools in the four states of Chhattisgarh, Mizoram, Rajasthan and Telangana, and provided professional development to 3,509 teachers and 244 teacher educators, enabling them to reach 76,226 students.

The initiative worked at the macro-, meso- and micro-levels in order to engage states, districts, school heads and teachers in the process of integrating EdTech meaningfully and with agency, into the system, ensuring that the various barriers to adoption were addressed through multiple levels of engagement. Localized support took the form of work with school heads and teachers, to integrate ICT lab sessions into timetables and address hardware problems.

Teachers were supported in developing their abilities to use technology and integrate it into their teaching-learning in order to achieve curricular objectives. They were linked to each other in mobile-based communities of practice and also received professional development in the form of practice-based blended learning courses.

Research on the impact of Clix shows that teachers' advanced digital skills and their engagement with online professional development improved, the longer they engaged with the programme. Student reports and observational records showed better engagement, higher levels of interest and peer learning. Teachers related curriculum with real life, promoted collaborative learning and learning from mistakes. Students taught by teachers who had received more professional development and used CLIx resources showed learning gains in English and science. Girl students performed significantly better in science.

Source: CLIx ,2020.

Use of EdTech in teacher preparation/professional development

The ICT revolution of the last decade provides an alternative to the widely used cascade approach to large scale in-service teacher education. Cascaded training is known to have limited impact. Commonly cited problems include transmission loss down the levels of the cascade, inefficiencies on account of scheduling and logistical problems, low responsiveness of centralized designs to needs of teachers, and poor follow-up/support to practice in classrooms (Singh et al., 2020). Even when well-conceptualized and well-conducted workshops produce 'highs', they are not found to automatically lead to adoption in the classroom (Dhankar, 2003).

A range of newly initiated professional development programmes using ICT have begun to emerge in the last five years, offering the following:

- greater variety, and hence a greater chance of relevance, and potential to meet diverse interests and needs
- high quality of expertise directly accessible to teachers
- flexibility to select programmes and take them at one's own pace
- online mentoring, reflection, interaction with peers and experts, either in professional learning communities or in courses

These new opportunities are delivered using EdTech platforms, and draw on a variety of approaches to professional learning. They may be designed as blended or fully online Massive Open Online Courses (MOOCs), or as online resources hosted on YouTube and on websites, or use social media apps to forge communities. A very large proportion of the organizations involved in this space are in the non-government sector. Most of these approaches are based on 'Bring Your Own Device' (BYOD) and 'Buy Your Own Data' models. They are also designed with the expectation that teachers will be accessing resources on their mobile phones.

PROFESSIONAL DEVELOPMENT RESOURCES

Several platforms and organizations offer open educational resources for professional development created in multiple Indian languages and tagged with metadata for searchability. While a lot of the resources are student-facing worksheets comprising activity ideas to take into the classroom, there are also teacher-facing resources in the form of short videos or text aimed at improving their understanding of issues and preparation for classroom.



Above: A young teacher uses a tablet to conduct an interactive class. Rajkiya Intermediate College, Uttarakhand, India.

Many are designed as Just In Time resources, short capsules which teachers may refer to just before they have to teach a topic. For example, videos explaining concepts try to provide teachers with a quick revision of topics/concepts before they teach them or lesson plans/lesson ideas for a class activity that they can conduct. It is expected that teachers will access these on their own initiative. The portals and platforms offering these have been promoted by state partners. Examples include the Million Sparks Foundation in collaboration with the State Council of Educational Research and Training (SCERT) in Delhi, and the Khan Academy's ready-to-use plans to assign content to students in states and union territories such as Delhi, Kerala and Rajasthan.

Resources to develop perspectives and understanding that require longer engagement are also available as Open Educational Resources (OERs) on several portals. These are intended for use by interested teachers investing personal time in their professional growth, or by teacher educators to enhance the quality of ongoing professional development, for example British Council, Cambridge Regional Institute of English, Study Webs of Active–Learning for Young Aspiring Minds (SWAYAM), Teacher Education through School-based Support (TESS) in India and TheTeacherApp.



Positive experiences in the classroom are compelling reasons for teachers to adopt active learning strategies

PROFESSIONAL DEVELOPMENT COURSES

In order to provide deep engagement in learning to form new understanding and beliefs that can translate into classroom practice, more rigorous courses of study are also being developed to be offered on scale via ICT. These involve using learning management systems to plan and organize courses with rich media inputs, interactivity and evaluation, leading to 'course completion', sometimes also including evaluation and certification. Like professional development resources, there is greater scope for variety, and also expert input in design. Some offerings which are designed to be self-accessed and/or self-paced, with machine-graded assignments to provide teachers feedback on their own learning, are more akin to professional development resources.

Longer, more structured learning programmes with pacing and evaluation aim to introduce greater rigour into the learning process, while providing some of the flexibility of online learning regarding when teachers access and study the content. They expect that teachers will respond positively, invest time in engaging with rigorous and well-designed professional learning resources, and will be motivated in taking new learning into the classroom to improve and change practices. Teachers' motivation to complete programmes is nurtured by enhancing interactivity (of content/evaluation, between instructors and teachers, or peer interaction), high quality of multimedia content, and issuing state circulars mandating requirements or using a fee-based model. Several such courses now include certification based on evaluation and grading, awarded by recognized authorities such as the SCERTs and, in a few cases, universities. This opens up the possibility of linking professional development to career pathways and higher education.

'Practice-based' approaches in design have also been used which require teachers to try things out in their classroom and report back and reflect on their experience. The key insight informing this approach is that their own students are the most important reference group for teachers. Positive experiences in the classroom are compelling reasons for teachers to adopt active learning strategies.

PROFESSIONAL LEARNING COMMUNITIES

Professional learning communities (PLCs) as a form of professional development has gained considerable attention on account of new ICT possibilities. Earlier, teacher resource centres (block- or cluster-level) were promoted in order to provide teachers with peer-learning fora, but proved to be difficult to scale effectively mostly on account of logistical and resource limitations. PLCs enabled by social media apps have helped develop social learning models of professional development. Experience and research draws attention to the importance of structure and facilitation or mediation in order to make PLCs work (Kasinathan and Rangarajan, 2017; Thirumalai et al., 2019).

The COVID-19 pandemic's effect on teachers and teaching

The response to the closure of all schools following the nationwide lockdown from 24 March 2020 has revealed the need to transition to, and use, online and remote learning technologies. It has laid bare the struggles and vulnerabilities of teachers, while amply demonstrating their commitment towards students and professional ethics as they found ways to equip themselves against all odds, and sought local solutions to ensure inclusion.

Several themes recur in newspaper reports and research studies. Teachers lack preparedness with respect to digital literacy and have uneven access to devices and the Internet. Several reports highlighted how teachers were exposed to embarrassment and even ridicule as their 'online' classrooms became open to viewing by parents, school administrators and even peers. Teachers were corrected for pronunciation, content knowledge and presentation of ideas during their classes, thereby impacting their credibility before their students. This was fairly frequent in the early period of the pandemic, but later reports tended to discuss their stressful experiences more sympathetically. Many teachers were found to be handling additional responsibilities such as delivering midday meals at students' homes, and delivering and collecting teaching-learning materials. They were also being pressed into COVID-19 duties such as door-to-door surveys, and are currently also involved in supporting vaccinations.

Most teachers have experienced changes in work timings with extended hours of engagement. The changes in modalities of engagement have blurred the boundaries between work and home. Several have experienced financial stress resulting from salary delays, reduced salaries and loss of jobs. Several reports have discussed mental and emotional stress, with concerns about the task of balancing the well-being of their families and themselves with work responsibilities and supporting peers.

The experiences of teachers during this period reveal three key threads:

1. job security, work- and home-life balance
2. digital access and literacy, professional training and resources
3. professional competence, agency and autonomy



Below: A teacher conducts an online session for her students. The COVID-19 pandemic has encouraged greater use of hybrid teaching practices in the education sector. Ahlcon International School, Delhi, India.

Work stress and job insecurities

FRONTLINE WORK

Teachers, particularly those in the government school system, have been assigned to and are engaged in frontline COVID-19 related duties, civic functions and essential educational work, putting them at a high risk of infection. Their work includes:

- conducting COVID-19 surveys, and facilitating vaccination
- distributing mid-day meal rations and learning materials at students' doorsteps or visiting schools to provide the same
- serving election duty
- assessing board examination answer scripts

In many cases, routine entitlements of compensatory leave have been restricted and several have not been able to avail vacations. Reports of deaths among teachers deployed for elections and COVID-19 related frontline duties have appeared in media, been reported by teachers' unions, and in some cases disputed by state authorities.[22] Teachers have not been included among frontline workers till date, and there are as yet no drives to cover teachers under vaccination programmes.

The call to reopen schools for face-to-face meetings and classes is now coming from several quarters and gaining momentum. The continued closure of physical schools comes at a great cost to students, worsening educational divides. There is an urgent need to plan to get students and their teachers back to school, and equally, an urgent need to recognize teaching as an essential service and teachers as frontline workers.

JOB SECURITY CONCERNS OF PRIVATE SCHOOL AND CONTRACTUAL TEACHERS

Within three months of lockdown, reports began to appear in the media about job losses suffered by private school teachers, pre-primary/ early childhood education (ECE) teachers, primary school teachers and contractual teachers. In a survey from as early as May 2020, 27 per cent of teachers across government and private sectors expressed concerns over job security (Singh et al., 2020). The reported job losses state-wise vary between 40,000 and 60,000 up to a few hundred thousand. There were reports of up to 65 per cent teachers having their salaries put on hold in private schools (see Figure 6.2) (CSF 2021: pp. 15) and instances of teachers being paid for their work on an hourly basis. Private schools reported being able to collect only about 10 per cent of their fee. The media has extensively reported the dire straits private school teachers have found themselves in, and who are now resorting to Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA) employment, vegetable vending, and returning to traditional occupations such as farming.[23]

[22] 1,621 deaths among Uttar Pradesh teachers deployed for election duty according to the UP Prathmik Shikshak Sangh and State Government Employees Association (The New Indian Express, 20 May 2021; India Today, 22 May 2021). 268 teachers in Karnataka (Times of India, 13 May 2021) and 255 teachers in Telangana died in the second wave of the COVID-19 pandemic (The New Indian Express, 15 May 2021).

[23] Deccan Chronicle, 8 July 2020; The Hindu, 2 July 2020; Times of India, 12 July 2020, Times of India, 22 August 2020, The New Indian Express, 25 November 2020; Times of India, 5 June 2021.

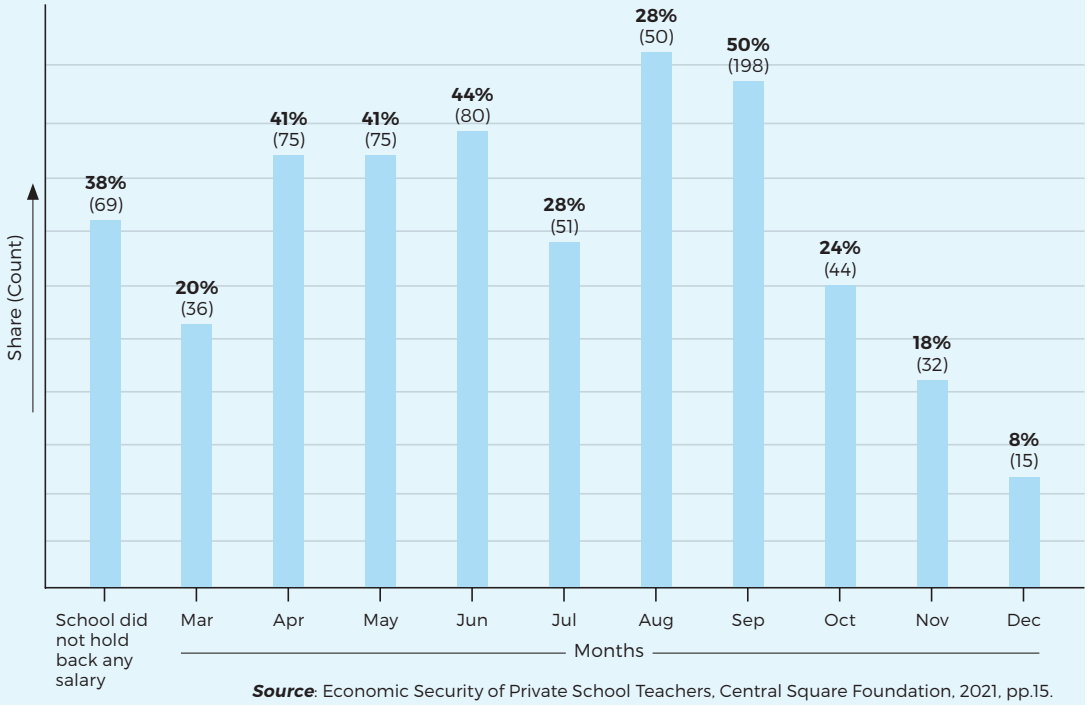
54% teachers do not have an alternate source of income, **30% supplemented** their salary with private tutoring/ coaching.

~65% teachers' salaries were put on hold by low-fee schools as compared to **37% teachers** whose salaries were put on hold by high-fee schools.

~55% teachers are highly confident that their school will be able to continue operations until the situation returns to normal. The confidence level significantly reduces among rural school teachers and low fee school teachers.

FIGURE 6.2

Months during which teacher salary was put on hold



Source: Economic Security of Private School Teachers, Central Square Foundation, 2021, pp.15.



Above: The new normal. A teacher sanitizes the hands of school students before class. Uttarakhand, India.

Most private schools run on tight budgets and are dependent on fee collection; they do not maintain reserve funds that can be used to tide over times of crises especially as extended as the current one. Several states, recognizing the widespread economic distress of the population, have instructed schools not to insist on fee collection for certain periods earmarked by the state. The National Council for Teacher Education (NCTE) also advised all Teacher Educational Institutes 'TEIs' to take lenient view on payment of fee, etc. and not to insist on payment of fee considering the COVID-19 crisis'. While reiterating that salaries and benefits payable to staff should be as per the policies of the state/affiliating body, the NCTE also advised that 'however, all TEIs are advised to take a lenient view on payment of salary and other benefits to employees' (NCTE, 2020: pp. 3). There is no systematic documentation on numbers of teachers who have lost their jobs or have suffered salary cuts on account of the COVID-19 pandemic. There are no reports, nor data, on the impact of job losses among music, dance, physical education, arts and crafts teachers, and on librarians, lab assistants, etc.

STRESS OF 'WORK FROM HOME' AND OVERALL ECONOMIC DOWNTURN

The overall economic impact of COVID-19 has also been a matter of concern for teachers (see Table 6.3). In general, job losses and medical needs were sources of concern given their family's dependency on multiple sources of income in order to make ends meet. 20 per cent of teachers reported an inability to concentrate, or work according to a plan, and 27 per cent reported anxiety regarding the stability of their jobs (Singh et al., 2020: 17).

TABLE 6.3
Concerns of teachers

	Total (%)	**Urban** (%)	**Rural** (%)
Overall: family's safety and well-being	86	89	79
One's own health	54	57	49
Availability of medicines and essential items	37	34	42
Economic crisis in the country	52	52	52
Professional concerns: students will lose touch with subject	72	73	70
Need for professional development	43	48	34
Backlog of syllabus to be covered	38	41	33
Additional burden for students struggling with the subject	42	44	37
Inability to concentrate or work according to plan	20	21	16
Job stability	27	28	22

Source: Singh et al., 2020: 17.



Infrastructural inequalities on account of family resources have directly contributed to educational inequalities

Difficulties in maintaining work-life balance while working from home has been noted as a commonplace effect of the COVID-19 pandemic, and this has been reported by teachers as well. Research also notes that 'women were seven times more likely to lose work during the nationwide lockdown, and conditional on losing work, eleven times more likely to not return to work subsequently, compared to men' (Abraham, Basole and Kesar, 2021). Although there is, as yet, no research focusing on women teachers in India, given the feminized character of the private school teaching workforce and the impact of the pandemic on private schools, there is likely to be far greater job loss among women teachers. Given the difficulties faced by students in accessing devices shared with parents in the home space, and the vagaries of power cuts, teachers have had to be far more flexible and work longer hours, starting early or working into the evening (Jal and Bawane, 2021; Jain, Lall and Singh, 2021). Out of the teachers surveyed in a study, 19 per cent reported taking online classes between 5 p.m. and 9 p.m. (Jal and Bawane, 2021). Many have also worked longer hours to prepare themselves, and to prepare resources for teaching.

Transitioning to online teaching

A very large proportion of teachers (74 per cent) found themselves transitioning to online teaching and using digital applications early in 2020 (Jal and Bawane, 2021). Most of them also reported experiencing difficulties in making this transition (70.5 per cent according to Jal and Bawane, 2021; 84 per cent according to Vyas, 2020). About 80 per cent were using smartphones for teaching (Jal and Bawane, 2020). Approximately 50 per cent reported themselves as 'very good' or 'good' at ICT skills such as typing a word document, converting word to PDF, recording audio lectures, recording video lectures, using ICT tools and teaching online. About 30 per cent reported being 'fair' on these skills.

By May 2020, teachers were experiencing and expressing a range of concerns about teaching students over the online/digital medium. Challenges included students' attention spans, students' punctuality, keeping all students on the same page, and ensuring that they were following instructions (see Table 6.4). 55 per cent of teachers also feared the negative effects of long exposure to digital media on their students, such as addiction to games and devices. Teachers of primary school students in particular expressed concern about engaging their students meaningfully (Singh et al., 2020). While most teachers felt that online learning was 'sometimes effective', there were also those (20 per cent) who felt that it was rarely so (Jal and Bawane, 2021). They were concerned about their inability to address differential learning needs of students and those who have specific learning disabilities, and the additional burden being created on students who may be struggling with the subject (Singh et al., 2020). Many teachers (70 per cent) reported that students were irregular in attending online classes (Jal and Bawane, 2021).

RESOURCE AND DIGITAL DIVIDE

Infrastructural inequalities on account of family resources have directly contributed to educational inequalities. School education access has been dependent on parents' and caregivers' ability to provide devices, pay for data plans, and invest time to supervise and co-teach young children. The Economic Survey 2020/21 noted that the proportion of schoolchildren's families that owned smartphones had increased from 36.5 per cent to 61.8 per cent. The Annual Status of Education Report (ASER) 2020 noted that 50

TABLE 6.4
Challenges faced by teachers while teaching online

Challenges	N	%
Most often the attendance is not full	1629	81.53
All students do not have a smartphone or other devices to access classes	1420	71.07
Students get easily distracted while the teaching is in progress	855	42.79
Classes get disrupted often due to poor Internet	1420	71.07
Noise and chaos	612	30.63
Students are unable to connect due to poor or no Internet facility	1140	57.06
It is difficult to teach and explain using the smartphone	812	40.64
Assessment of students becomes challenging many a times	151	7.56
Difficulty in giving individual attention to each student	168	8.41
Parents have regular complaints about such classes	455	22.77
Lack of parental support and assistance to their children's education.	635	31.78
Parents cannot afford Internet costs	778	38.94

Source: Jal and Bawane, 2021.



Above: A teacher balances her phone against a bottle during an online workshop. Ahlcon International School, Delhi, India.

per cent children in low-income households do not have access to smartphones in their homes and about 60 per cent have access to TV. Only 29 per cent of government school teachers – as opposed to 59 per cent of teachers in aided schools and 89 per cent of teachers in private schools – were of the view that most of their students had access to smartphones (Singh et al., 2021). Teachers reported having to be very flexible about scheduling their classes, as it was based on when smartphones were available to their students. Flexible scheduling of classes through the day (reported earlier) and over the week has been one of the ways to work around the digital divide. 50 per cent of teachers reported conducting online classes every day. About 27 per cent reported that they conducted classes on alternate days, and 19 per cent reported conducting classes once or twice a week. The length of each class varied between twenty minutes to one hundred and twenty minutes (Jal and Bawane, 2021).

Professional agency, autonomy, resourcefulness

Teachers' pedagogic and professional work has become visible as educational processes have left the closed confines of classrooms and schools into homes and public spaces. Not only has the importance of teachers and teaching become evident, but equally their identity as ethical professionals – working diligently and exercising professional judgement, agency and resourcefulness – to enable students to engage with education, has emerged. More studies are bringing this professionalism and commitment to the fore.

INVENTION AND ADAPTATION

Teachers' inventiveness in reaching their students, especially to bridge the digital divide, was noted in many parts of the country. A significant number of teachers (31.68 per cent) also used a range of offline methods to reach their students (Jal and Bawane, 2021). This included making phone calls, selected community visits and facilitation. There were instances reported of teachers who visited their students at home, following a staggered schedule of visits, and taught them using their home walls as blackboards. Some ran *mohalla* (community) classes in neighbourhoods where infection rates were low.[24] Others went into the community to reach their students, using loudspeakers fixed to vans, carts or street lights and mobilizing community spaces such as the panchayats.[25]

Realizing that standard products/resources made at the state-level or national level did not fully meet their needs, there were instances of teachers creating studios and lab set-ups in their own home, where they recorded lessons tailored to their own contexts.[26] Teachers reached out to communities, and created/adapted/translated and shared learning materials (Sahni, 2020).

In a study of 103 teachers in two states, government teachers who had been engaged with professional development through certificate courses in integrating ICT for active, interactive project-based learning, indicated that they used instant messaging applications to stay in touch with students. They created and disseminated small instructions, resources and lesson plans in local languages to continue learning during the COVID-19 pandemic. A few also implemented project-based learning, getting students to use resources from the home, and forming small local groups where they could interact in person and share resources (Charania et al., 2021).

[24] Financial Express, 17 September 2020.

[25] Hindustan Times, 26 December 2020.

[26] Hindustan Times, 5 September 2020.

BOX 6.1

Teachers finding local solutions

Jeyaishwari R Nadar, working in a government aided school in Mumbai, innovated to use her mobile phone to broadcast herself to her students as she solved problems in real time. She converted the table in her home into a blackboard and used a refrigerator tray to prop up her phone, so that students could see what she was writing.
(The Indian Express, 15 August 2020)

Shyam Kishore Gandhi, a principal of a government school in Jharkhand painted the walls in his students' homes with illustrations of fruits and vegetables, and the Hindi and English alphabet.
(The New Indian Express, 11 January 2021)

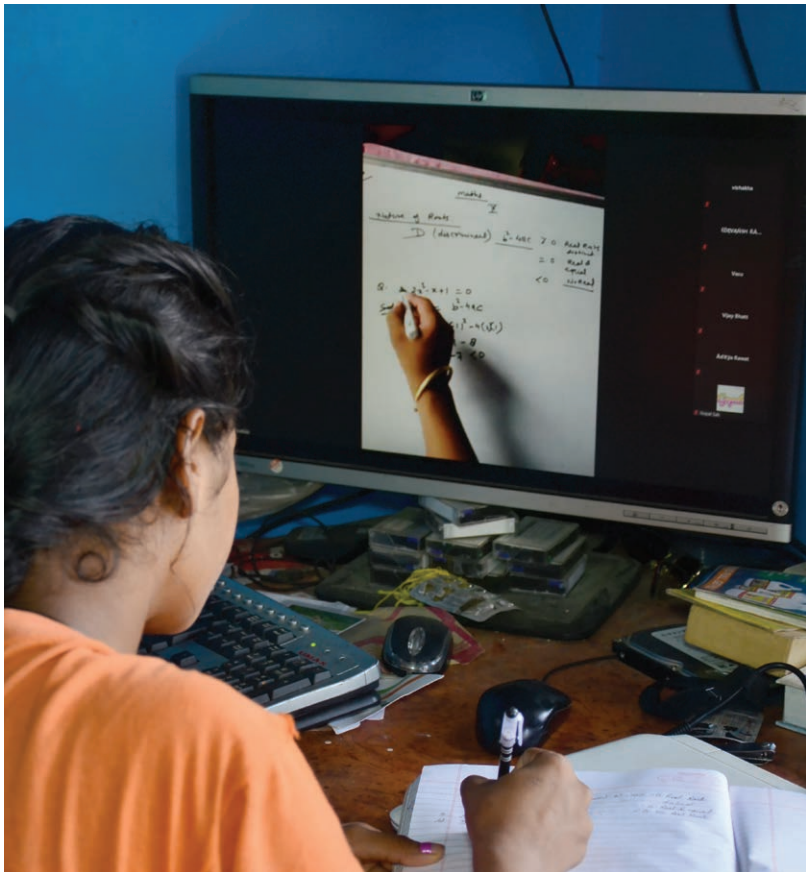
Navin Chandra Jha, principal-in charge in Gumla, was awarded by the All India Primary Teacher Federation (AIPTF) for developing worksheets across subjects with the help of a local NGO, and visiting homes of his students to help them learn and access materials.
(Times of India, 4 January 2021)

Bhim Mahto, Bokaro, Jharkhand, took advantage of the village temple which was located in a central place. He set up a blackboard and used the temple speaker to reach his students, who gathered at a safe distance around him, and taught them.
(Times of India, 19 June 2021)

Box 6.1 highlights the importance of teachers with motivation, and the ability to lead and solve local problems, for resilient educational systems. The highly localized nature of these instances and the fact that they have been coming to the fore through media reports rather than systemic channels, indicates the largely personalized nature of these initiatives, as opposed to being the result of a systemic devolution of autonomy and encouragement of unconventional solutions in the face of the collapse of conventional processes. Finding a way to collate and amplify these efforts could contribute to peer learning. More importantly for the system, the question remains how such initiatives can receive positive support and recognition, not only in times of crises but also in 'normal times' (Dabholkar and Krishnan, 2013).

Opposite page: A student with disability uses digital tools for learning.

Below: A student learning remotely during the COVID-19 pandemic.



Systemic initiatives: need for hybrid responses

With the focus on digital/online learning, the use of DIKSHA has grown over the last year, and a drive has led to a threefold increase in resources hosted on it (Karwal, 2020). There have been several efforts to train teachers in online teaching. NISHTHA, a massive in-service teacher education programme for teachers and school leaders went online in 2020/21, and also included a module on online teaching and digital tools. But in a country with wide variations in digital infrastructure and ownership, this cannot suffice as the basis of educational response design. Additional and parallel efforts are in place, including the Alternative Academic Calendar (AAC),[27] delivering print-based teaching-learning materials to students at their doorstep, Manodarpan[28] – part of the Pradhan Mantri e-vidya platform – that provides toolkits and guidance for psychosocial support for students, teachers and parents, initiatives of the central government, the NCERT and the CBSE. Radio and TV broadcasts for secondary school students have been in place since September 2020. The National Institute of Open Schooling (NIOS) innovated with the use of technology to reach persons with disabilities (see Case Study 9).

[27] https://ncert.nic.in/alternative-academic-calendar.php

[28] http://manodarpan.mhrd.gov.in/

CASE STUDY 9

NIOS – including students through programming with Indian Sign Language

The National Institute of Open Schooling from India won the UNESCO King Sejong Literacy Prize 2021 for its programme 'Enabling education of persons with disabilities through technology-enabled inclusive learning material, with specific focus on Indian Sign Language based content'.

The NIOS is an autonomous organization under the Indian Ministry of Education aiming to provide quality education to all through open and distance learning. It focuses on the educational needs of persons with disabilities, particularly hearing-impaired and hard-of-hearing learners and other minority groups.

The programme focuses on the use of digital tools and local language to help persons with disability, providing learners the option to access content based on Indian Sign Language (ISL). The programme notably developed sign-language-version videos in seven subjects at secondary and senior secondary levels, as well as an ISL dictionary, made available through the NIOS portal.

Since its inception, the NIOS has been committed towards providing a learning environment which is inclusive and accessible to all. With the help of technology, NIOS was able to disseminate learning content to more learners and provided flexible opportunities to learn anywhere at any time for the entire duration of the course, making it possible for learners to study at their own pace.

In response to the COVID-19 crisis, NIOS provided learners with online educational support throughout the year, using various online platforms in addition to delivering a one-hour live TV programme in Indian Sign Language twice a week. Learners who lacked access to consistent Internet connectivity due to remote locations were able to download learning materials either through minimal broadband, or satellite transmission.

The programme embraced inclusive distance and technology-enabled literacy learning by adopting various high-tech (online platforms and apps) and low-tech (TV and radio) solutions, and has followed diverse strategies to reach out to hearing-impaired and hard-of-hearing learners across the country.

By allowing learners to learn in their native language, the programme considerably improves their confidence in expressing themselves fully in sign language. With the effective integration of ICT, particularly in sign language, the enrolment of persons with disabilities, and hearing-impaired and hard-of-hearing learners, is consistently increasing in the academic programmes of NIOS. Since 2018, 24,285 learners have benefited from the programme.

The NIOS hopes to reach out to more and multifarious learners with a special focus on strategies for persons with disabilities. They aspire to develop ISL-based content for students from Grade 1 to Grade 12 in the remaining subjects in both academic and skill-oriented courses, produce assessments in sign language that suit the language needs of hearing-impaired and hard-of-hearing learners, and foster stronger advocacy and promotion.

To celebrate International Literacy Day, the National Institute of Open Schooling encourages everyone to promulgate sign language resources so that more learners are able to benefit from the content materials developed.

This year's UNESCO International Literacy Prizes have been awarded to six outstanding literacy programmes from Côte d'Ivoire, Egypt, Guatemala, India, Mexico and South Africa on the occasion of International Literacy Day.

Source: https://indiaeducationdiary.in/unesco-literacy-prize-is-awarded-to-programme-enabling-education-of-persons-with-disabilities-in-india/ (accessed September 30 2021).





Above: A math teacher conducting online classes.

A number of foundations and NGOs, higher education institutions, publishers and EdTech companies have responded to the crisis by offering free online courses and webinars on e-teaching, and free resources. The AINET Association of English Teachers, Azim Premji Foundation, the British Council, Cambridge, Central Square Foundation (CSF), Centre for Equity and Quality in Universal Education (CEQUE), Oxford University Press, Pratham, Quest Alliance, Tata ClassEdge, Tata Institute of Social Sciences, Tata Trusts and UNICEF continued their work to aid teachers with resources, micro-credit modules and short webinar series focused on tools, methods and approaches to teaching, even during the pandemic. Publishers have made their resources available online free of cost. Teachers' familiarity with and use of numerous platforms for meetings, learning management systems and resource access has grown exponentially.

Several state governments have also initiated large-scale training of their teachers for online and digital learning, and offer video recordings and resources in local languages (see Box 6.2).

BOX 6.2

State government initiatives

Context-specific initiatives have come to the fore in several states.

Kerala began 'First Bell', an online/digital programme series broadcast on VICTERS channel, and *Avadikala Santhoshangal* (Happy Vacation Times) to make up for lost instruction days. Specific online ICT training was provided to 81,000 primary school teachers, which was completed within 5 days through effective use of high-tech facilities in 45,000 classrooms in 4,752 schools across the state, and leveraging the SAMAGRA Resource Portal.[29] Furthermore, students submitted articles, short stories and poems on environment, hygiene, COVID-19 and disease-prevention, that were published on the School Wiki portal.[30]

In **Chhattisgarh**, *Padhai Tunhar Dwar* (education at your doorstep) connected teachers and students with a mix of content including live classes, offline video lectures, simulations, animations, worksheets, podcasts, etc.

Similarly, in **Jharkhand**, DigiSATH leveraged multiple channels – WhatsApp, television, the DIKSHA app, offline learning – and started 30,000 WhatsApp groups to connect administrators, 90 per cent of teachers, and 1 million students across the state. Remedial content and quizzes are sent out everyday. *Mohalla* classes and *bal sansads* (one student reaches out to ten) facilitating peer-learning are supplemented by teachers visiting students' homes.

In **Nagaland**, learning materials were distributed on pen drives at a nominal charge to interested parents.

In **Andhra Pradesh** and **Telangana**, government schools are found to be outperforming private schools in providing lessons through WhatsApp, radio and television, print materials access, recorded lectures and/or engaging students in online lectures.

Source: Department of School Education & Literacy (DoSEL), *India Report - Digital Education*, 2020.

29 www.samagra.kite.kerala.gov.in

30 www.schoolwiki.in

In June 2020, in the early stages of the COVID-19 pandemic, digital classrooms were not conducted in the states/union territories of Jammu and Kashmir, Karnataka, Lakshadweep, Madhya Pradesh, Manipur, Mizoram, Nagaland, Rajasthan, Telangana and West Bengal (DoSEL,2020: 24–25). However this changed over the year, and by December 2020, only states in the north-east and Jammu and Kashmir were reporting use of WhatsApp rather than digital classrooms as their primary mode of teaching (Annual Status of Education Report [ASER], 2020: 36). Another report notes that digital classroom transition is lagging in government schools and in low-fee-paying private schools (Oxford University Press [OUP], 2021:23). Despite the various measures taken by individual teachers, schools, educational bodies, state and central governments, and various NGOs, it appears that close to '30–40 per cent of students are not in touch with their teachers, though this varies significantly by state' and this inequity particularly is more prevalent in rural and younger children (UNICEF, 2021: 1).

What now, what next

Recognizing the systemic and widespread character of the setback on account of COVID-19, the Ministry of Education (MoE) plans to address the objectives of NEP 2020 in three phases – maintain, restore and grow (see Box 6.3). This is a recognition of the fact that considerable effort will need to go into ensuring that hard-won achievements of the last two decades with regard to enrolment and learning are not lost.



Right: School reopening: familiar faces in masks is a common sight now. Beawar, Rajasthan, India.

BOX 6.3

The MoE plan to address the COVID-19-induced setback and meet the objectives of NEP 2020

FIRST PHASE
MAINTAIN

Maintain the education service through initiatives such as Mid Day Meal (MDM), home learning, identify and bring dropouts and Out of School Children (OoSC) back to school, develop the student registry to mobilize services, create control and command centre for teachers and schools, and a helpline for parents and students, teacher capacity building, and engage with parents and community.

SECOND PHASE
RESTORE

This is the phase when schools will reopen. In this phase, focus on learning recovery, with packages to help children recover with teachers supporting the mental well-being of students, along with bridge courses, roll-out of state students registries, and an aggregated database in the National Student's Registry, assessment reforms, pedagogical reforms, etc.

THIRD PHASE
GROW

In this phase, undertake very close tracking of achievements in learning levels and learning outcomes, at all stages of school education, along with capacity building of all stakeholders to enable them to align to these goals, and contribute towards achieving them. Therefore, in this phase, states and union territories will essentially leverage all the resources of the past and all the resources prepared for the future, to ensure continuity of quality and equitable education.

Source: MoE, COVID Action Plan, 2021, pp. 3–4.



A discourse on 'learning loss' is beginning to gain prominence as a new academic session starts

Although there have been many initiatives, these have had limited ability to address issues of equity. The infrastructure dimension of online and digital solutions, a key bottleneck, are currently being met from private expenditure – by teachers, and by parents for their children. Given the overall limitations of online and digital solutions in comprehensively addressing all levels of school, varied learning needs and regional requirements, the resultant picture looks somewhat patchy. Moreover, the vision for educationally worthwhile experiences and learning has remained focused on traditional literacy-numeracy based scholastic learning. There has been little opportunity to review and envision a curriculum that can continue to address educational goals, where the home rather than school is the primary site of learning. As a result, as we enter a new academic session, a discourse on 'learning loss' is beginning to gain prominence.

QUALITY LEARNING FOR ALL

Discussions on the accumulation of 'deficits', the need for 'remediation', etc. are now commonplace in education circles that are reviewing the impact of the COVID-19 pandemic. Teachers will face the full brunt of this. On one hand, they will need to assess and address their students' learning needs, and on the other, deal with systemic expectations on how, and how quickly, learning needs can be addressed and with what results. There is a danger that the discourse of deficits will introduce stress and induce pedagogic hopelessness/paralysis among teachers – a condition seen when teachers start feeling that their efforts will not yield results in terms of student engagement and learning.

There are several pressing questions that need to be addressed in order to build resilient educational systems. How can the system recognize that teachers are professionals grounded in strong professional ethics, and support them in addressing the challenge with which they are now faced – the growth and learning of their own students after the COVID-19 pandemic? Can the system trust their professional judgment and capability, and resist treating them as deficit/incomplete professionals? Can the system foster their engagement and motivation through recognition and peer support systems, instead of limiting accountability to performance measurement?

Opposite page: New setup to teach at home: a teacher uses a tripod-mounted phone to interact with students.



Summary

Most teachers have positive attitudes and beliefs about integrating technology in education, however they feel that it is time-consuming and that they lack relevant professional skills.

Teachers have largely used the smartphone as their primary EdTech tool during the COVID-19 pandemic. However a large proportion of students had limited or no access to devices and data, and hence teachers have had to devise hybrid ways of staying in touch.

Professional development using technology platforms – when the platforms enable greater agency and interaction among teachers – offer possibilities for building communities and new professional learning pathways.

The COVID-19 pandemic has exposed the vulnerability of teachers, and their insecure position.



Interaction between a teacher and students
at a remote learning session.



CHAPTER 7

Recommendations

The chapter makes ten recommendations derived from the analyses of the status of teachers, teaching and teacher education presented in this report.

7 Recommendations

Recommendation 1

Improve the terms of employment of teachers in both public and private schools

Like in most other countries, the work performed by Indian teachers needs to be better recognized and valued. Besides, the profession needs to be treated at par with other professions or sectors. Many teachers, whether in private or in government schools, are not compensated fairly and suffer from poor working conditions. A significant number of teachers work with short contracts, mostly without corresponding statutory benefits, and receive low salaries as compared with regular teachers. The view that government teachers are overpaid in comparison with teachers in private schools is also problematic. Early childhood education teachers, special education teachers and private school teachers are among the most vulnerable in the system in terms of job security and working conditions, and more research is needed to understand these segments of the teaching community.

Recommendation 2

Increase the number of teachers and improve working conditions in north-eastern states, rural areas and 'aspirational districts'

Special attention needs to be paid to rural areas, districts with high scheduled caste and tribe populations, and all across India's north-east, where the ratio of teachers to students needs to improve and be rationalized. Working conditions in these 'difficult-to-staff' regions also need to be improved, including basic amenities, better provisioning of libraries, and access to information and communications technology (ICT). More state support for teacher education programmes is desirable in these regions.

Below: Young Children gather for morning assembly at a rural school. Shahpura, Rajasthan, India.





Above: A student undergoes thermal screening as she arrives at school. Beawar, Rajasthan, India.

Recommendation 3

Recognize teachers as frontline workers

The COVID-19 pandemic has shed light on the numerous crucial functions teachers perform to enable the state system to deliver services. These range from distributing mid-day meal rations, textbooks and study materials to conducting examinations, evaluating papers, participating in community awareness and even helping with vaccination drives. With schools reopening, teachers, especially early childhood educators, will be at high risk of exposure. Recognizing their many contributions, supporting them, vaccinating them fully and ensuring their well-being should be a high priority.

Recommendation 4

Increase the number of physical education, music, art, vocational education, early childhood and special education teachers

These subjects are an integral part of any schooling system and they contribute significantly towards the holistic development of students. Yet, the staffing of these categories of teachers is not systematically planned, nor is there adequate documentation of their availability and deployment. The number of programmes for the professional development of teachers in these fields is also very limited and uneven across the country. Apart from appointing regular teachers in these areas, artists, sportspersons, health professionals may also be roped in with schools as volunteers. More state support for teacher education programmes in these areas of the curriculum is desirable. The inclusion of school social workers and counsellors would also help the education system develop greater resilience and localized responsiveness. The National Education Policy 2020 envisages measures that should be implemented at the earliest in order to address many of the above issues.



Above: A teacher quizzes students on the day's lessons. Composite School Hoshiyarpur, Uttar Pradesh, India.

Recommendation 5
Value the professional autonomy of teachers

The professional identity of teachers is important and must be enhanced and respected by creating structures of supervision and professional development that nurture and value their autonomy. Strict curricula and micromanagement of their work often devalue and demotivate them. The COVID-19 pandemic has further shown that localized action is needed to address educational emergencies and crises.

Recommendation 6
Build teachers' career pathways

The career path of a teacher varies from state to state and is currently flat in many, with very limited opportunities to move up the system into either instructional leadership and administrative roles, or mentoring roles such as guiding beginner teachers and teacher education. There is a need to recognize additional specific roles – including curriculum or academic head, science teacher head, evaluation head, etc. – that teachers could aspire to for vertical mobility. Recognizing such roles within the education system, both within the proposed school complex structures in government schools as well as in private schools, is the first step. Widening the scope of professional development initiatives – offered in part-time and open and distance learning modes – and linking professional learning opportunities to career pathways and professional development would enable teachers to participate more effectively in a wider range of professional work.

Recommendation 7

Restructure pre-service professional development and strengthen curricular and pedagogical reform

There is a need for more research and innovation in professional formation. Teacher development must respond to the diversity of contexts in which teachers work and the dispositions, attitudes and skills they require, especially to address rural contexts and work with underprivileged groups. Teachers must develop pedagogical content knowledge as well as a critical understanding of social context and the aims of education. The pre-service teacher education curriculum must provide new entrants with deeper knowledge and understanding of pedagogy that enables them to teach differently from how they themselves learnt. Teaching standards should be used to inform and shape professional development rather than for performance measurement and appraisal. Diverse educational pathways into the profession are desirable to develop a diverse and motivated teaching workforce.

Below: Teacher training at JSNSNMP school, Gairsain, Uttarakhand, India.





Above: A teacher conducts an interactive biology class. Gurukul Vidya Niketan, Uttarakhand, India.

Recommendation 8
Support communities of practice

There is growing and conclusive evidence that the quality of teaching has wide-ranging impact on learning outcomes. It is essential to support pedagogical shifts in all curricular areas towards more student-centric teaching-learning practices that promote learners' confidence and participation. For this, in-service teacher education will need to engage with teachers' beliefs and ideas about learning and learners. Professional learning is social, and communities of practice interacting through teacher resource centres or in online communities will need to be cultivated to support reforming pedagogical cultures.

Recommendation 9
Provide teachers with meaningful ICT training

With large-scale use of ICT in education, especially on account of the COVID-19 pandemic, all teachers must be provided with professional training in the use of ICT to support and promote active learning. Using ICT in education has become a necessary and required competence in all teachers. The definition of such competence should be broadened to include an ability to adapt and integrate technology to further active learning goals, addressed through skills as well as knowledge and beliefs.

Recommendation 10

Develop teaching governance through consultative processes, based on mutual accountability

Systems of accountability and review must be developed through consultative processes involving all stakeholders to reach consensus and therefore ensure acceptability. This includes a need to cultivate a greater involvement of teachers and their representatives in policy matters that concern them. In order to succeed, systems of governing teaching, teachers and teacher education must be transparent and built on mutual trust between the various stakeholders.



Below: Teachers share best practices and key takeaways with each other at a knowledge-sharing session. Ahlcon International School, Delhi, India.

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Below: Students line up for physical education class. Rajkiya Intermediate College, Uttarakhand, India.

Back Cover: Global teacher prize winner Ranjitsinh Disale, uses a tablet to conduct an interactive class.





Centre of
Excellence in
Teacher
Education

The Centre of Excellence in Teacher Education (CETE) at the Tata Institute of Social Sciences, Mumbai (bit.ly/cetewebsite), aims to enable Right to Quality Education for all children in India by helping teachers respond to diverse and changing needs. Built around the central premise that professional qualified teachers can create lasting impact, the centre focuses on empowering teachers, improving professional development standards, supporting the teacher education ecosystem, and advocating the strengthening of policy on teaching and teacher education.

Research at the centre is on the themes of quality in teaching, policy and scaling innovations, inclusion, curriculum and pedagogy, and EdTech. Academic teaching programmes include B.Ed.-M. Ed., M.A. Education, doctoral research, short term programmes through blended learning, and online offerings to enhance capabilities of teachers and teacher education faculty (www.tissx.tiss.edu). Key field action projects are focused on improving inclusive teaching-learning at schools and employing technology thoughtfully in professional development of teachers. The Connected Learning Initiative (www.tiss.clix.edu), was awarded the UNESCO King Hamad Prize for the Use of ICTs in Education in 2018. CETE received seed support from the Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching, Government of India, and TATA TRUSTS.

CETE founding partner

TATA TRUSTS



1 San Martin Marg, Chanakyapuri
New Delhi 110 021, INDIA
T: +91-11-2611 1873/5 & 2611 1867/9
E: newdelhi@unesco.org
W: http://www.unesco.org/new/en/newdelhi/home

unesco