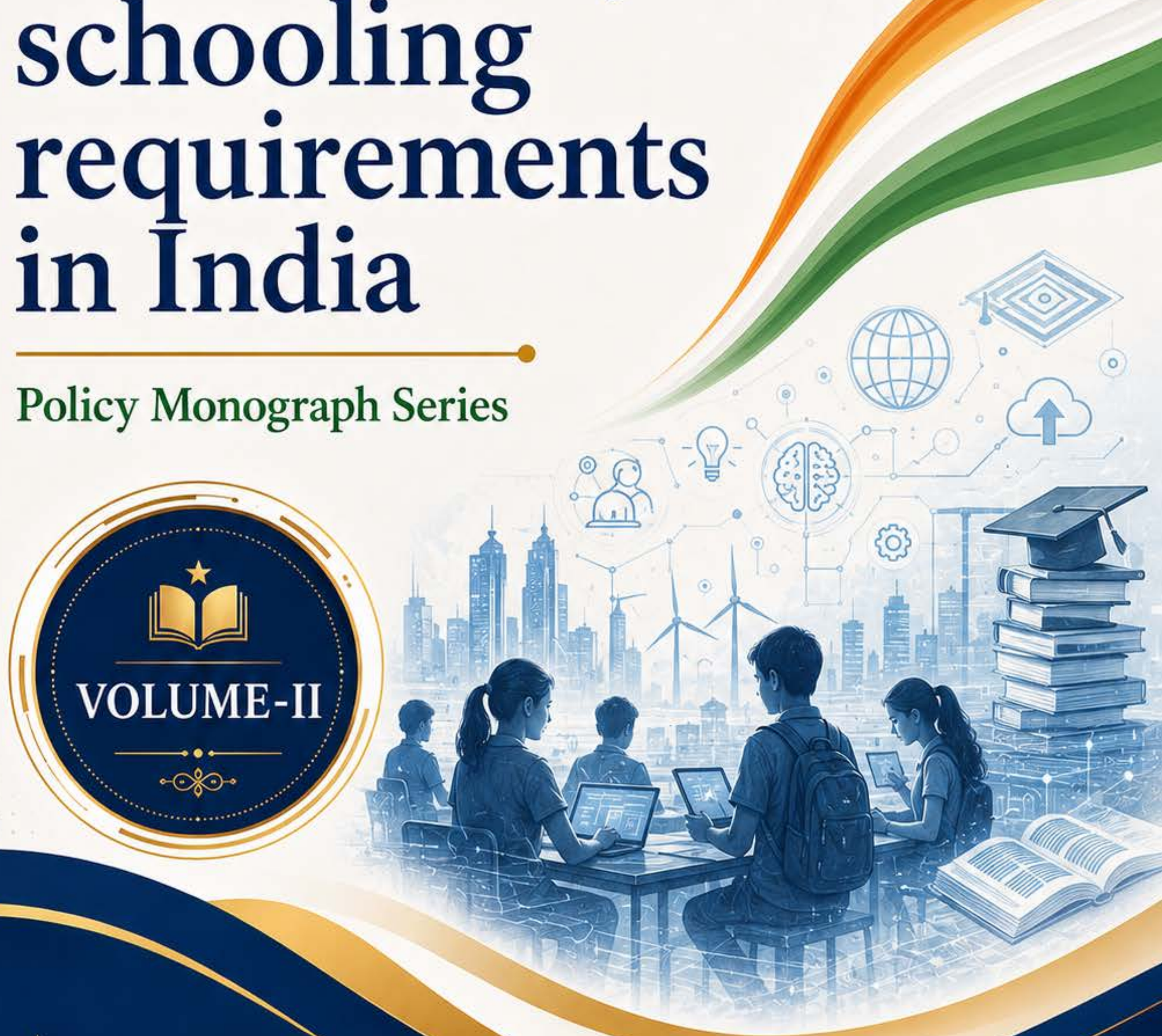
Planning 21st-century schooling requirements in India

Policy Monograph Series



Towards an
Equitable, Inclusive and
Future-Ready Education System

Planning 21st-century schooling requirements in India

VOLUME-II

Future-Ready Schools
Inclusive Learners
Viksit Bharat 2047

Planning 21st-century schooling requirements in India

A state-level framework for infrastructure, teachers, digital readiness, inclusion, and learning outcomes

Future-Ready Schools
Inclusive Learners
Viksit Bharat 2047

Scholars Choice Press
An imprint of Educators Plus
India

2026

Copyright Page

Title: *Planning 21st-century schooling requirements in India: A state-level framework for infrastructure, teachers, digital readiness, inclusion, and learning outcomes*

Author: Dr. Harshvardhan Singh

Series: *Education for Viksit Bharat 2047: Policy Monograph Series*

Volume: II

Publisher: Scholars Choice Press, An imprint of Educators Plus

Place of Publication: New Delhi, India

Year of Publication: 2026

ISBN: 978-81-686513-1-9

Disclaimer

This policy monograph has been prepared for academic, policy, planning, and educational discussion purposes. The analysis, frameworks, models, planning tools, and recommendations presented in this work are intended to support evidence-informed school education planning in India. While the monograph draws upon official policy documents, education data systems, and credible institutional sources, the interpretations, framework design, and recommendations are those of the author.

The author and publisher do not claim that the proposed framework replaces statutory norms, official government guidelines, departmental rules, scheme-specific financial provisions, or legal requirements. State education departments, district authorities, schools, and other implementing agencies are advised to use the framework in alignment with applicable government policies, rules, financial procedures, and local administrative contexts. Every effort has been made to ensure accuracy and originality.

However, education data, policy guidelines, institutional arrangements, and administrative procedures may change over time. Readers are encouraged to consult the latest official documents and government notifications before making policy or administrative decisions.

Suggested Citation

Singh, H. (2026). *Estimating 21st-century schooling requirements in India: A state-level planning framework for infrastructure, teachers, digital readiness, inclusion, and learning outcomes*. Educators Plus.

Series Citation Format

Singh, H. (2026). *Estimating 21st-century schooling requirements in India: A state-level planning framework for infrastructure, teachers, digital readiness, inclusion, and learning outcomes* (*Education for Viksit Bharat 2047: Policy Monograph Series*, Vol. II). Educators Plus.

Author Profile

Dr. Harshvardhan Singh is an education researcher, psychometrician, and curriculum-evaluation professional working in the areas of educational measurement, teacher education, inclusive education, school education quality, learning assessment, and policy-relevant educational research. His academic and professional work focuses on evidence-based reform, research tool development, learner diversity, teacher capacity, and education system improvement.

His work engages with the practical challenges of school education planning, including learning-outcome improvement, assessment design, teacher professional development, inclusive schooling, research instrumentation, and educational quality monitoring. He has worked extensively on the development and analysis of research tools, survey frameworks, evaluation formats, and academic instruments used for educational research and institutional planning.

Dr. Singh's policy-oriented writing is grounded in the belief that education reform must be both evidence-based and implementation-sensitive. He emphasises the need to connect policy goals with measurable indicators, institutional capacity, field-level realities, and learner-centred outcomes. His work highlights the importance of planning systems that go beyond administrative compliance and focus on meaningful learning, inclusion, teacher capability, digital readiness, and school improvement.

Through the *Education for Viksit Bharat 2047: Policy Monograph Series*, Dr. Singh aims to contribute to policy discussion on strengthening India's education system for long-term national development. His writings seek to support policymakers, state education departments, SCERTs, DIETs, BRCs, CRCs, school leaders, teacher educators, NGOs, and researchers in designing practical, data-informed, and future-ready education strategies.

Preface

India's school education system has entered a new phase of policy and planning. For many decades, the central concern of school development was expansion: opening more schools, constructing classrooms, appointing teachers, increasing enrolment, and ensuring minimum facilities. These efforts were necessary and significant. They helped bring education closer to children and strengthened the foundation of mass schooling. However, the requirements of schooling in the 21st century can no longer be understood only through the traditional indicators of schools, classrooms, teachers, and enrolment.

The central argument of this monograph is that India now requires a more integrated and future-ready approach to estimating schooling requirements. A school may have enrolment, but children may not be learning at the expected level. A school may have classrooms, but they may not be safe, inclusive, or adequate for active learning. A school may have teachers, but it may still lack subject balance, digital pedagogy, inclusive education capacity, assessment literacy, or mentoring support. A school may have computers, but it may not be digitally ready. A school may enrol children with disabilities or disadvantaged learners, but it may not have the support systems required for meaningful participation. These realities require a new planning lens.

This monograph proposes the **21st-Century Schooling Requirement Estimation Framework**, or **21-SREF Model**, as a practical state-level planning framework. The model brings together eight major pillars: access and enrolment, physical infrastructure, teacher availability and capacity, digital readiness, inclusion and equity, learning outcomes and assessment, health/safety/socio-emotional wellbeing, and governance/finance/monitoring. The purpose is to help states estimate not only what exists, but what is required for every child to learn, participate, progress, and thrive.

The need for such a framework is especially important in the context of **Viksit Bharat 2047**. The children currently in India's schools will become the citizens, workers, professionals, innovators, teachers, entrepreneurs, caregivers, and leaders of 2047. Their future contribution will depend on the quality of schooling they receive today. If schooling remains limited to administrative provision, India may miss the opportunity to build the human capability required for inclusive national development. If schooling is planned as an integrated system of learning, inclusion, safety, digital readiness, and wellbeing, it can become one of the strongest foundations of a developed India.

Future-ready schooling estimation must therefore be state-led and district-sensitive. India's states differ widely in population patterns, geography, rural–urban distribution, migration, infrastructure availability, teacher deployment, language diversity, social disadvantage, digital access, and learning outcomes. A single national template cannot address all these variations. States require planning models that can convert national priorities into district-wise, block-wise, and school-wise action. The 21-SREF Model has been developed with this purpose.

This monograph is written for policymakers, state education departments, NITI-type institutions, SCERTs, DIETs, BRCs, CRCs, school leaders, teacher educators, NGOs, education planners, and researchers. It does not attempt to function as a conventional textbook on school education. Instead, it is intended as a practical policy monograph that offers planning logic, estimation domains, indicators, implementation pathways, monitoring tools, and policy recommendations.

The chapters proceed from the need for rethinking schooling requirements to specific planning domains such as demographic demand, infrastructure, teachers, digital readiness, inclusion, learning outcomes, and wellbeing. The final chapter presents the 21-SREF Model as an integrated state-level framework. The appendices provide practical checklists, templates, and matrices that can be adapted for field use by states, districts, blocks, clusters, and schools.

This work is based on a simple but important belief: India's school system must now move from **school availability** to **school capability**. The question is not only whether a school exists, but whether it has the conditions required for every child to learn with dignity. This shift is essential for equity, human capital, institutional strengthening, and Viksit Bharat 2047.

Acknowledgement

The preparation of this policy monograph has been guided by the larger national conversation on transforming school education in India for the 21st century. The vision of equitable, inclusive, competency-based, digitally enabled, and future-ready schooling has informed the conceptual direction of this work. The monograph draws inspiration from India's continuing efforts to strengthen school education through policy reform, institutional capacity building, teacher development, learning assessment, inclusive education, and data-based governance.

I acknowledge the contribution of India's education policy ecosystem, including national and state-level institutions working in school education, teacher education, assessment, curriculum reform, inclusive education, educational technology, and school quality improvement. The work of the Ministry of Education, NCERT, SCERTs, DIETs, Samagra Shiksha institutions, district education offices, BRCs, CRCs, school leaders, and teachers has provided the broader context within which this monograph has been conceptualised.

I also acknowledge the importance of official education data systems and policy instruments such as UDISE+, NAS, PARAKH, PGI, NEP 2020, NIPUN Bharat, Samagra Shiksha, school safety guidelines, inclusive education frameworks, and SDG-4. These systems and frameworks have made it possible to think about school education not only as a matter of access, but also as a matter of quality, equity, learning, safety, inclusion, and governance.

I am grateful to the many teachers, researchers, school leaders, teacher educators, students, parents, and education practitioners whose experiences continue to show that schooling reform must be grounded in field realities. Their work reminds us that educational planning is not merely a technical or administrative exercise. It directly affects the life chances of children, especially those who face disadvantage, disability, poverty, language barriers, migration, learning difficulties, or lack of support.

I extend my appreciation to **Educators Plus** for supporting policy-oriented educational writing and for encouraging the development of practical monographs that connect research, planning, and implementation. The *Education for Viksit Bharat 2047: Policy Monograph Series* is intended to contribute to informed public discussion and practical planning in the education sector.

Finally, I acknowledge all policymakers, administrators, educators, and researchers working toward the goal of a more equitable and capable India. The future of Viksit Bharat 2047 will depend significantly on the strength of today's schools. This monograph is offered as a modest contribution to that shared national task.

Content

List of Tables:

List of Figures:

Methodological Note / Source Note

This monograph is a policy-oriented conceptual and planning document. It does not present primary field survey data, experimental findings, or state-wise statistical estimates generated by the author. Instead, it develops a practical state-level planning framework for estimating 21st-century schooling requirements in India by synthesising official policy priorities, public education data systems, recognised national frameworks, and implementation needs emerging from contemporary school education reform.

The central framework proposed in this monograph, the **21st-Century Schooling Requirement Estimation Framework**, or **21-SREF Model**, is an original planning model developed for this work. It is intended to help state education departments, SCERTs, DIETs, BRCs, CRCs, district education officials, school leaders, NGOs, and education planners move from conventional input-based school planning to integrated requirement estimation. The model organises schooling requirements into eight pillars: access and enrolment, physical infrastructure, teacher availability and capacity, digital readiness, inclusion and equity, learning outcomes and assessment, health/safety/socio-emotional wellbeing, and governance/finance/monitoring.

The analytical approach used in the monograph is **policy-synthesis based**. It draws upon the goals and priorities of major official education documents and systems, including the National Education Policy 2020, National Curriculum Framework-related reforms, NIPUN Bharat, Samagra Shiksha, UDISE+, NAS, PARAKH, PGI, school safety guidelines, inclusive education frameworks, Manodarpan, and SDG-4. These sources have been used to identify policy directions, planning domains, monitoring categories, and practical indicators relevant to school education in India.

The monograph does not fabricate statistics. Where numerical data, official definitions, or national indicators are discussed, they are drawn from official government reports, institutional documents, or credible international sources. However, because data systems are periodically updated, users of this monograph should consult the latest official publications before making final administrative, financial, or policy decisions.

The tables, matrices, checklists, and templates included in the monograph are designed as **planning tools**. They are not statutory formats and should not be treated as substitutes for government rules, financial norms, scheme guidelines, or departmental reporting formats. State governments and education departments may adapt them according to local needs, state-specific priorities, official data formats, and approved administrative procedures.

The proposed planning framework is also **implementation-sensitive**. It recognises that states differ widely in geography, demography, migration patterns, teacher availability, language diversity, school infrastructure, digital access, social disadvantage, disability support needs, and learning outcomes. Therefore, the 21-SREF Model should not be applied as a rigid template. It should be adapted through state-level consultation, district-level validation, school-level verification, and alignment with existing state planning cycles.

The monograph uses the term “schooling requirements” in a broad policy sense. It includes not only physical and human resources but also the conditions required for meaningful access, participation, learning, safety, inclusion, wellbeing, digital use, assessment, and governance. This wider definition is necessary because 21st-century schooling cannot be judged only by the presence of schools, classrooms, teachers, and enrolment. It must also be judged by whether learners are achieving foundational and grade-level competencies, whether disadvantaged learners are supported, whether schools are safe, whether teachers are professionally equipped, whether digital resources are pedagogically used, and whether data are guiding planning decisions.

The monograph is intended to support policy discussion, planning, institutional reflection, and field-level implementation. It may be used by state education departments for planning workshops, by SCERTs and DIETs for capacity-building programmes, by districts for review meetings, by BRCs and CRCs for school-support planning, by NGOs for programme design, and by researchers for policy analysis. Its main purpose is to help education systems ask more precise planning questions: What is required? Where is it required? For whom is it required? Who will provide it? How will it be financed? How will it be monitored? And how will it improve children's learning and wellbeing?

Executive Summary

Planning 21st-century schooling requirements in India: A state-level framework for infrastructure, teachers, digital readiness, inclusion, and learning outcomes

India's school education system is entering a phase in which traditional planning tools are no longer sufficient. For several decades, school planning was understandably centred on expansion: opening schools, constructing classrooms, appointing teachers, increasing enrolment, providing textbooks, and ensuring basic facilities. This approach was necessary for a large and diverse country seeking to universalise schooling. However, the requirements of 21st-century schooling are wider, deeper, and more complex. A school system cannot now be considered adequate merely because children are enrolled, classrooms exist, teachers are posted, and basic facilities are reported. The deeper policy question is whether every child is able to access school, attend regularly, learn at grade level, participate safely, receive support according to need, use technology meaningfully, develop socio-emotional strength, and transition successfully across stages of education.

This monograph argues that India needs a new state-level framework for estimating schooling requirements. The proposed framework is titled the **21st-Century Schooling Requirement Estimation Framework**, or the **21-SREF Model**. It is designed to support state education departments, SCERTs, DIETs, district education officials, BRCs, CRCs, school leaders, NGOs, and policy researchers in estimating schooling requirements in a practical, evidence-based, and implementation-oriented manner.

The central argument of the monograph is that future-ready schooling requires India to move from **input-based school planning** to **integrated requirement estimation**. Input-based planning asks whether schools, classrooms, teachers, toilets, devices, and enrolment exist. Requirement estimation asks whether these inputs are sufficient, functional, inclusive, safe, digitally enabled, learning-linked, equitably distributed, and supported by governance systems. This shift is essential for achieving the ambitions of NEP 2020, SDG-4, Viksit Bharat 2047, and state-level education reform.

NEP 2020 provides the broad policy foundation for this shift by emphasising universal access, foundational literacy and numeracy, competency-based education, inclusion, technology use, teacher professional development, assessment reform, and holistic development. It explicitly recognises that education is central to national development, equity, and the realisation of human potential. SDG-4 similarly calls for inclusive and equitable quality education and lifelong learning opportunities for all, making it clear that access and quality must be planned together.

The 21-SREF Model therefore treats schooling requirements as a multidimensional state-planning problem. It proposes that every state should estimate requirements across eight interconnected pillars: **access and enrolment; physical infrastructure; teacher availability and capacity; digital readiness; inclusion and equity; learning outcomes and assessment; health, safety, socio-emotional learning and wellbeing; and governance, finance and monitoring.** These pillars are not separate schemes. They are mutually reinforcing conditions for future-ready schooling.

Why India Needs a New Schooling Requirement Framework

India already has significant education data systems and policy instruments. UDISE+ functions as a national-level school education management information system under the Department of School

Education and Literacy and provides core data on schools, teachers, students, and infrastructure. NAS is a national large-scale assessment intended to provide information about learning achievement and to evaluate children's progress and learning competencies as an indicator of the health of the education system. PARAKH has been established in NCERT to set norms, standards, and guidelines for student assessment and to support assessment-related activities under NEP 2020. PGI 2.0 provides a multidimensional performance lens for states and Union Territories, while PGI-D supports district-level performance review.

However, the existence of data systems does not automatically create integrated planning. Data must be converted into decisions. Decisions must be converted into budgeted plans. Plans must be converted into implementation. Implementation must be monitored for functionality, equity, and learning outcomes. The problem is not only data availability; it is the absence of a consolidated state-level framework that can bring demographic demand, infrastructure gaps, teacher needs, digital readiness, inclusion support, school safety, learning outcomes, and finance into one planning architecture.

Traditional school planning has four common limitations. First, it often counts present enrolment but does not sufficiently estimate future demand arising from population change, migration, urbanisation, transition to secondary education, dropout prevention, and re-entry of out-of-school children. Second, it counts infrastructure assets but does not always verify whether classrooms, toilets, laboratories, libraries, ICT labs, ramps, electricity, water, and safety systems are functional and accessible. Third, it estimates teachers largely through pupil–teacher ratios but may not adequately capture subject-wise requirements, grade-level needs, difficult-area deployment, special educators, digital pedagogy, FLN capacity, assessment literacy, and mentoring requirements. Fourth, it treats learning outcomes as an evaluation matter rather than as a planning input.

The 21st century requires a different approach. A school system may have adequate enrolment but weak learning. It may have classrooms but poor safety or inaccessible facilities. It may have computers but no meaningful digital pedagogy. It may have teachers but not the right subject teachers. It may enrol children with disabilities but lack special educators, assistive technology, reasonable accommodation, or inclusive pedagogy. It may conduct assessments but fail to use results for remediation. It may collect data but not use it for district-level decision-making. These gaps show why India needs a schooling requirement framework that is broader than traditional input planning.

The 21-SREF Model: Core Idea

The **21-SREF Model** defines schooling requirements as the full set of physical, human, digital, inclusive, academic, safety, wellbeing, governance, and financial conditions required for every child to access, continue, participate in, and benefit from schooling. It is a planning model, not only an evaluation model. It helps states estimate what is required, where it is required, why it is required, how it should be prioritised, who should implement it, and how progress should be monitored.

The model rests on five planning assumptions.

First, **schooling demand is dynamic**. Present enrolment is only one indicator. States must also consider projected school-age population, age-appropriate enrolment, out-of-school children, retention, dropout, transition, migration, urbanisation, and secondary/higher secondary expansion.

Second, **infrastructure must be functional and future-ready**. Schools require not only buildings and classrooms, but also libraries, laboratories, electricity, drinking water, sanitation, inclusive access, ICT spaces, safe campuses, disaster preparedness, climate resilience, and learner-friendly environments.

Third, **teachers must be planned as a professional capability system**. Teacher planning should include headcount, PTR, subject balance, stage-wise requirements, deployment equity, FLN pedagogy, competency-based teaching, digital pedagogy, inclusive education, assessment literacy, mentoring, and continuous professional development.

Fourth, **learning outcomes must shape resource allocation**. NIPUN Bharat identifies foundational learning as the basis of all future learning and warns that children who do not acquire basic reading, writing, and mathematical skills are left unprepared for the curriculum beyond Grade III. Therefore, FLN, grade-level competencies, diagnostic assessment, remedial teaching, and academic mentoring must be treated as core schooling requirements.

Fifth, **equity and wellbeing must be built into planning**. Future-ready schooling must provide support for children with disabilities, neurodiverse learners, children with SLD, girls at risk of dropout, first-generation learners, migrant children, children from poverty-affected households, and learners needing socio-emotional or mental health support. Inclusion and wellbeing are not peripheral concerns; they are conditions for meaningful participation.

Eight Pillars of the 21-SREF Model

Pillar 1: Access and Enrolment

The first pillar estimates schooling demand through school-age population, enrolment, GER, NER, age-appropriate enrolment, attendance, dropout, retention, transition, migration, out-of-school children, and re-entry needs. This pillar moves planning beyond present enrolment. It asks whether every child who should be in school is enrolled, attending, progressing, and transitioning to the next stage.

This is especially important for secondary and higher secondary schooling. If more children complete elementary schooling, states must anticipate the need for secondary seats, subject teachers, laboratories, transport, counselling, digital access, and vocational exposure. Access planning must therefore be forward-looking.

Pillar 2: Physical Infrastructure

The second pillar estimates classrooms, libraries, laboratories, drinking water, sanitation, electricity, handwashing, boundary safety, playgrounds, ramps, CWSN-friendly toilets, resource rooms, ICT spaces, disaster preparedness, and climate resilience. UDISE+ already recognises many of these infrastructure categories in school data reporting.

The 21-SREF Model argues that infrastructure should be counted as adequate only when it is available, functional, accessible, safe, maintained, and linked to learning. A toilet without water, a library without use, a ramp without usability, an ICT lab without functioning devices, or a classroom that is unsafe cannot be considered a fulfilled schooling requirement.

Pillar 3: Teacher Availability and Capacity

The third pillar estimates teacher requirements beyond PTR. NEP 2020 recognises the need for teacher professional development, subject-wise teacher planning, and support for foundational literacy and numeracy. The 21-SREF Model extends this logic into state planning by requiring teacher estimation across level, grade, subject, location, language, inclusion needs, digital pedagogy, assessment literacy, and mentoring requirements.

States should estimate not only how many teachers are needed, but what capacities teachers require. A future-ready teacher workforce must be able to support FLN, competency-based education, inclusive

classrooms, digital learning, formative assessment, socio-emotional development, and remedial teaching.

Pillar 4: Digital Readiness

The fourth pillar treats digital readiness as a schooling requirement. It includes electricity, connectivity, devices, ICT labs, smart classrooms, digital content, teacher e-readiness, student access, assistive technology, cyber safety, responsible AI use, and data systems. The ICT component under Samagra Shiksha formally recognises ICT and smart classrooms as part of school education support.

The central point is that digital readiness is not the presence of devices. It is the capacity of the school to use technology meaningfully, equitably, safely, and pedagogically. A digitally ready school is one where technology supports teaching, practice, feedback, assessment, inclusion, governance, and learning improvement.

Pillar 5: Inclusion and Equity

The fifth pillar estimates support for children with disabilities, neurodiverse learners, children with SLD, girls, first-generation learners, migrant learners, children from disadvantaged communities, and learners requiring academic or socio-emotional support. Equity must be treated as a planning principle, not only a policy value.

This pillar requires accessible infrastructure, assistive technology, special educators, resource teachers, reasonable accommodation, disability screening and referral systems, bridge courses, parent counselling, community support, and targeted support for disadvantaged groups. It ensures that schooling is not merely available but genuinely accessible and participatory.

Pillar 6: Learning Outcomes and Assessment

The sixth pillar uses learning outcomes, FLN progress, grade-level competencies, classroom assessment, state assessments, NAS, and PARAKH-aligned systems to estimate academic support requirements. NAS provides system-level evidence on learning achievement and competencies, while PARAKH provides a national assessment architecture for standards, guidelines, and assessment-related activities.

This pillar shifts the planning question from “Was teaching completed?” to “Did children learn?” If children do not achieve grade-level competencies, the state must estimate the need for remedial support, teacher mentoring, learning materials, diagnostic assessment, digital practice tools, and academic monitoring.

Pillar 7: Health, Safety, SEL, and Wellbeing

The seventh pillar estimates school safety, disaster preparedness, health, hygiene, counselling, socio-emotional learning, mental health referral, anti-bullying systems, adolescent support, and child protection. School safety guidelines issued by the Ministry of Education establish safety and security as matters of school accountability, not optional activities.

Future-ready schooling requires emotionally safe and physically safe learning environments. SEL and wellbeing are not decorative additions; they affect attendance, learning motivation, peer relationships, confidence, adolescent development, and retention.

Pillar 8: Governance, Finance, and Monitoring

The eighth pillar estimates the governance and finance capacity needed to implement the other seven pillars. It includes state dashboards, district review systems, school development plans, data integration, financial prioritisation, field verification, social audit, academic monitoring, and maintenance systems.

PGI 2.0 and PGI-D demonstrate the importance of multidimensional monitoring at state and district levels. However, monitoring must not remain a reporting exercise. It must guide resource allocation, identify bottlenecks, verify functionality, and support course correction.

Implementation Logic

The 21-SREF Model is designed for phased implementation.

In the **short term**, within 0–1 year, states should create a 21-SREF task group, consolidate available data, prepare district-wise baseline profiles, identify urgent gaps, and prioritise safety, basic facilities, teacher vacancies, FLN gaps, inclusion needs, and non-functional digital infrastructure.

In the **medium term**, within 1–3 years, states should prepare district and block schooling requirement plans, strengthen teacher deployment and CPD, upgrade infrastructure, expand digital access, institutionalise inclusion support, implement remedial learning plans, and create dashboards for monitoring.

In the **long term**, within 3–5 years, states should institutionalise the 21-SREF Model within annual planning, five-year projections, school development planning, district review systems, SCERT and DIET programmes, teacher workforce forecasting, digital governance, and finance allocation. The goal is to make schooling requirement estimation a permanent state-capacity function.

Actionable Recommendations for State-Level Education Planning

1. **Adopt a state-level 21-SREF planning framework.** Each state should adapt the eight-pillar model to its own demographic, geographic, fiscal, linguistic, and institutional context.
2. **Move from input counting to functional adequacy verification.** Classrooms, toilets, libraries, laboratories, ICT facilities, ramps, and teacher posts should be reviewed for actual functionality and use.
3. **Prepare district-wise schooling requirement profiles.** Every district should have a consolidated profile covering access, infrastructure, teachers, digital readiness, inclusion, learning outcomes, wellbeing, and finance.
4. **Use projected demand for secondary and higher secondary planning.** States should estimate future requirements from transition rates, Grade 8 and Grade 10 completion patterns, migration, and local population trends.
5. **Create subject-wise and stage-wise teacher forecasting systems.** Teacher planning should include PTR, subject vacancies, retirement projections, difficult-area deployment, special educators, and digital/inclusive pedagogy capacity.
6. **Place FLN and grade-level competencies at the centre of planning.** NIPUN Bharat, classroom assessment, state assessments, NAS, and PARAKH-aligned evidence should guide academic support, teacher mentoring, and remedial planning.
7. **Build digital readiness as an equity and learning strategy.** Digital planning should include connectivity, devices, content, teacher e-readiness, student access, assistive technology, cybersecurity, maintenance, and responsible AI use.

8. **Institutionalise inclusion and support services.** States should plan for special educators, assistive technology, accessible infrastructure, SLD support, neurodiversity-sensitive classrooms, parent counselling, and referral networks.

9. **Integrate school safety, SEL, and mental health into school development plans.** Safety audits, disaster preparedness, counselling access, peer support, and socio-emotional learning should be reviewed regularly.

10. **Strengthen SCERTs, DIETs, BRCs, and CRCs as implementation institutions.** These bodies should support teacher capacity, assessment literacy, digital pedagogy, inclusion, FLN, and classroom-level improvement.

11. **Use equity-weighted financing.** Schools and districts facing compounded disadvantage should receive higher priority in infrastructure, teacher deployment, digital access, inclusion support, and remedial learning.

12. **Create integrated state education dashboards for decision-making.** UDISE+, HRMIS, assessment data, infrastructure audits, digital readiness records, inclusion data, safety reviews, and finance tracking should be brought together for planning and monitoring.

Closing Policy Message

The future of Indian schooling depends on the ability of states to estimate requirements with precision and act on them with urgency. A developed India cannot be built on schools that are merely counted; it requires schools that are prepared, inclusive, safe, digitally enabled, learning-focused, and well governed. The 21-SREF Model offers a practical route for this transition. It helps states ask the right questions: Which children are being left behind? Which schools are underprepared? Which teachers need support? Which facilities are non-functional? Which learners are not achieving competencies? Which districts need priority investment? Which data should guide action?

Future-ready schooling is ultimately a question of equity, human capital, and state capacity. If India can build a school system where every child is visible, supported, safe, included, and learning, it will create the human foundation for **Viksit Bharat 2047**.

Key Policy Messages

1. Move from Input Counting to Requirement Estimation

School planning in India must move beyond the traditional counting of schools, classrooms, teachers, and enrolled children. These indicators remain important, but they do not fully explain whether a school is capable of delivering meaningful, inclusive, safe, and future-ready education. State-level planning must now estimate what is actually required for every child to enter school, attend regularly, learn at grade level, receive support, use digital resources, remain safe, and transition successfully across stages. This requires a shift from provision-based planning to requirement-based estimation. The proposed 21-SREF Model supports this shift by treating schooling requirements as an integrated combination of access, infrastructure, teachers, digital readiness, inclusion, learning outcomes, wellbeing, and governance.

2. Make State-Level Estimation the Core of School Education Planning

India's schooling requirements cannot be estimated through a single national template because states differ widely in demography, geography, migration, urbanisation, teacher availability, infrastructure conditions, social disadvantage, language diversity, and learning levels. Each state should develop district-wise and block-wise schooling requirement profiles using UDISE+, state data, NAS, PARAKH-aligned assessments, PGI indicators, school-level records, and local verification. These profiles should guide annual planning, five-year projections, teacher recruitment, infrastructure investment, digital expansion, inclusion support, and learning recovery. State-level estimation must become a regular governance function, not a one-time data exercise. Only then can policy priorities be translated into actionable, budgeted, and monitorable plans.

3. Treat Infrastructure as Learning-Space Readiness, Not Construction Alone

Future-ready infrastructure is not limited to school buildings and classrooms. It includes safe and adequate classrooms, functional toilets, drinking water, electricity, libraries, laboratories, playgrounds, inclusive access, ICT spaces, counselling spaces, disaster preparedness, climate resilience, and learner-friendly environments. States should assess infrastructure through functionality, safety, accessibility, adequacy, maintenance, and learning use. A toilet without water, a library without reading activity, a ramp without usability, or an ICT lab without functional devices cannot be counted as fulfilled infrastructure. Infrastructure planning must therefore move from asset reporting to learning-space readiness. Every school development plan should identify critical infrastructure gaps and classify them by safety urgency, basic dignity, inclusion need, learning relevance, and future-readiness priority.

4. Estimate Teacher Requirements Beyond Pupil–Teacher Ratio

Pupil–teacher ratio is necessary but insufficient for 21st-century teacher planning. States must estimate teacher requirements by grade, stage, subject, location, language, school size, transition demand, secondary expansion, and learner-support needs. A school may meet PTR norms and still lack science, mathematics, language, special education, vocational, arts, physical education, or ICT teachers. Teacher deployment must also address regional imbalance, difficult-area vacancies, urban overcrowding, rural multi-grade contexts, and local language needs. Teacher planning should include sanctioned posts, working teachers, vacancies, surplus positions, retirement projections, subject gaps, and deployment equity. A future-ready school system requires the right teachers in the right subjects, at the right stages, in the right locations.

5. Build Teacher Capacity as a Continuous Professional System

Teacher availability alone cannot ensure learning. Teachers must be professionally prepared for foundational literacy and numeracy, competency-based pedagogy, inclusive education, digital pedagogy, multilingual classrooms, formative assessment, remedial teaching, socio-emotional support, and classroom-level data use. SCERTs, DIETs, BRCs, CRCs, and school complexes should be strengthened as academic-support institutions rather than only administrative reporting channels. Continuous professional development should be based on classroom needs, student learning evidence, subject requirements, and teacher career stages. Training must be followed by mentoring, classroom observation, peer learning, and feedback. Teacher capacity planning should therefore become an essential part of state-level schooling requirement estimation, not a separate training calendar.

6. Make Digital Readiness a Pedagogical and Equity Requirement

Digital readiness should not be measured only by the presence of computers, internet connections, smart boards, or tablets. A digitally ready school has functional devices, reliable power, connectivity, curriculum-aligned digital content, trained teachers, student access, assistive technology, cyber-safety practices, maintenance systems, and responsible data use. Digital planning must also address equity. Learners from poor households, rural areas, migrant families, girls, children with disabilities, and first-generation learners may face unequal access to devices, connectivity, language support, and digital confidence. Technology should support learning, remediation, inclusion, assessment, and governance. It should not become symbolic hardware. States should therefore integrate digital readiness into infrastructure, teacher training, assessment, inclusion, and school improvement plans.

7. Place Inclusion and Support Services at the Centre of School Planning

Inclusion cannot be reduced to enrolment of children from disadvantaged groups or children with disabilities. True inclusion requires accessible infrastructure, trained teachers, special educators, assistive technology, reasonable accommodation, learning support, counselling, parental guidance, and referral systems. Schools must be prepared to support children with disabilities, neurodiverse learners, learners with specific learning disabilities, girls at risk of dropout, first-generation learners, migrant children, tribal learners, and children from poverty-affected households. State planning should include cluster-level resource support, special educator deployment, assistive-device banks, screening and referral mechanisms, inclusive pedagogy training, and parent-school partnership. Future-ready schooling must ensure that every child is visible, supported, and able to participate with dignity.

8. Use Learning Outcomes as a Planning Indicator, Not Only an Assessment Result

A school system may have enrolment, infrastructure, teachers, and digital resources, yet still fail if children do not achieve grade-level competencies. Learning outcomes must therefore be built into schooling requirement estimation. NAS, PARAKH-aligned assessments, state assessments, classroom assessment, and FLN monitoring should be used to identify learning gaps, plan remedial support, guide teacher mentoring, allocate academic resources, and review district performance. Assessment should not become a ranking exercise alone. Its purpose must be diagnosis, feedback, remediation, and improvement. If children are below grade level, the system must estimate the requirement for additional instructional time, teacher support, learning materials, digital practice, counselling, and inclusion-linked academic support.

9. Prioritise FLN and Learning Recovery as System Requirements

Foundational literacy and numeracy are the base of all future learning. If children fail to acquire reading, writing, comprehension, number sense, and basic mathematical reasoning in early grades, later schooling becomes increasingly difficult. States should treat FLN as a requirement-estimation domain,

not only a mission activity. This means estimating trained teachers, learning materials, school-readiness support, reading corners, numeracy kits, classroom assessment tools, parent engagement, and remedial time. Learning recovery should also continue beyond early grades because many learners enter middle and secondary school with cumulative gaps. Remedial support must be dignified, structured, regular, and evidence-based. It should help learners re-enter grade-level learning without stigma.

10. Integrate School Safety, Health, SEL, and Wellbeing into Planning

A future-ready school must be physically safe, emotionally supportive, inclusive, and developmentally responsive. School safety includes safe buildings, fire safety, electrical safety, disaster preparedness, safe transport, child protection, emergency response, and accountability systems. Wellbeing includes counselling, socio-emotional learning, peer support, mental health awareness, anti-bullying mechanisms, adolescent guidance, and referral support. These areas should not be treated as optional add-ons after academic planning. They directly affect attendance, participation, concentration, confidence, retention, and learning. Every school development plan should include a safety and wellbeing component. Districts should regularly review safety audits, counselling needs, disaster preparedness, SEL activities, and student-support mechanisms.

11. Plan Secondary and Higher Secondary Expansion Before Demand Becomes a Crisis

As more children complete elementary education, states must anticipate demand for secondary and higher secondary schooling. Expansion should not mean only adding seats or upgrading schools on paper. Secondary education requires subject teachers, laboratories, libraries, ICT facilities, vocational exposure, career guidance, counselling, safe transport, adolescent-friendly facilities, and learning support for students entering with foundational gaps. Higher secondary planning must also consider subject streams, practical work, digital resources, vocational pathways, and career transitions. States should use transition rates, Grade 8 and Grade 10 completion patterns, migration, population projections, and district-level demand to prepare five-year expansion plans. Without anticipatory planning, secondary dropout and inequity may increase.

12. Link Future-Ready Schooling with Viksit Bharat 2047

The vision of Viksit Bharat 2047 depends on the quality of today's schooling. The children now in classrooms will become India's future workers, entrepreneurs, teachers, scientists, professionals, citizens, caregivers, and leaders. Their capabilities will depend on whether schools provide meaningful learning, inclusion, digital readiness, safety, wellbeing, and life preparation. Schooling requirement estimation is therefore not merely an administrative exercise; it is a national development strategy. States must treat school education as human-capital infrastructure. A developed India cannot be built on uneven, unsafe, under-supported, or learning-deficient schools. Future-ready schooling must ensure that every child, regardless of background, is able to learn with dignity and contribute to India's social, economic, and democratic future.

References

Department of Empowerment of Persons with Disabilities. (n.d.). *Acts administered by the Department*. Government of India. https://depwd.gov.in/en/acts/

Department of School Education and Literacy. (n.d.-a). *ICT@Samagra Shiksha*. Ministry of Education, Government of India. https://dsel.education.gov.in/en/scheme/ict-samagra

Department of School Education and Literacy. (n.d.-b). *ICT and digital initiatives under Samagra Shiksha*. Ministry of Education, Government of India. https://dsel.education.gov.in/sites/default/files/1Framework_for%20_ICT.pdf

Department of School Education and Literacy. (n.d.-c). *National Achievement Survey*. Ministry of Education, Government of India. https://dsel.education.gov.in/en/nas

Department of School Education and Literacy. (n.d.-d). *Samagra Shiksha*. Ministry of Education, Government of India. https://dsel.education.gov.in/en/scheme/samagra-shiksha

Department of School Education and Literacy. (2021). *Guidelines on school safety and security*. Ministry of Education, Government of India. https://dsel.education.gov.in/sites/default/files/2021-10/guidelines_sss.pdf

Department of School Education and Literacy. (2023). *National guidelines and implementation framework on equitable and inclusive education*. Ministry of Education, Government of India. https://dsel.education.gov.in/sites/default/files/guidelines/NGIFEIE_dosel.pdf

Manodarpan. (n.d.). *Psychosocial support for mental health and well-being of students*. Ministry of Education, Government of India. https://manodarpan.education.gov.in/

Ministry of Education. (2020). *National Education Policy 2020*. Government of India. https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf

Ministry of Education. (2021a). *National Digital Education Architecture: Technology in education background note*. Government of India. https://www.education.gov.in/shikshakparv/docs/Technology_Education_Background_note.pdf

Ministry of Education. (2021b). *Revised guidelines for library grant and promoting reading in schools*. Government of India. https://samagra.education.gov.in/docs/revised_guidelines_for_promotion_Library_Reading%20.pdf

Ministry of Education. (2023). *About National Education Policy*. Government of India. https://www.education.gov.in/en/nep/about-nep

Ministry of Education. (2024). *NISHTHA: National Initiative for School Heads' and Teachers' Holistic Advancement*. Department of School Education and Literacy, Government of India. https://dsel.education.gov.in/sites/default/files/miscellaneous/NISHTHA-en.pdf

Ministry of Education. (2025a). *NIPUN Bharat: Foundational literacy and numeracy*. Department of School Education and Literacy, Government of India. https://dsel.education.gov.in/en/nipun-bharat

Ministry of Education. (2025b). *UDISE+ report 2024–25: NEP structure*. Government of India. https://www.education.gov.in/sites/upload_files/mhrd/files/statistics-new/UDISE%2BReport%202024-25%20-%20NEP%20Structure.pdf

Ministry of Education. (2026a). *Performance Grading Index 2.0 for States/UTs 2024–25*. Government of India. https://www.education.gov.in/sites/upload_files/mhrd/files/statistics-new/PGIS2425.pdf

Ministry of Education. (2026b). *Performance Grading Index for Districts 2024–25*. Government of India. https://www.education.gov.in/sites/upload_files/mhrd/files/statistics-new/PGID2425.pdf

Ministry of Education. (n.d.-a). *DIKSHA*. PM eVIDYA. https://pmevidya.education.gov.in/diksha.html

Ministry of Education. (n.d.-b). *PM SHRI schools: Framework on school transformation, Part 1*. Government of India. https://pmshri.education.gov.in/assets/pdf/part1_pmshri.pdf

Ministry of Education. (n.d.-c). *PM SHRI schools: Framework on school transformation, Part 3*. Government of India. https://pmshri.education.gov.in/assets/pdf/part3_pmshri.pdf

Ministry of Electronics and Information Technology. (2023). *The Digital Personal Data Protection Act, 2023*. Government of India. https://www.meity.gov.in/static/uploads/2024/06/2bf1f0e9f04e6fb4f8fef35e82c42aa5.pdf

Ministry of Electronics and Information Technology. (2025). *Digital Personal Data Protection Rules, 2025*. Government of India. https://www.meity.gov.in/static/uploads/2025/11/53450e6e5dc0bfa85ebd78686cadad39.pdf

National Council for Teacher Education. (n.d.). *National Professional Standards for Teachers*. Government of India. https://ncte.gov.in/website/NPST/NPSTOverview.aspx

National Council of Educational Research and Training. (2022). *PRASHAST: A disability screening checklist for schools*. NCERT. https://ncert.nic.in/pdf/DSCS_booklet.pdf

National Council of Educational Research and Training. (2023a). *About PARAKH*. NCERT. https://ncert.nic.in/parakh/about.php

National Council of Educational Research and Training. (2023b). *A roadmap to competency-based assessment: PARAKH*. Ministry of Education, Government of India. https://www.education.gov.in/sites/upload_files/mhrd/files/nep/TS16_3.pdf

National Council of Educational Research and Training. (2023c). *National Achievement Survey 2021 report card*. NCERT. https://nas.gov.in/report-card/2021

National Council of Educational Research and Training. (2024). *PARAKH Rashtriya Sarvekshan 2024*. NCERT. https://ncert.nic.in/parakh/rashtriyasarvekshan.php

National Council of Educational Research and Training. (n.d.). *NCERT initiatives for inclusive and accessible education*. NCERT. https://ncert.nic.in/accessibility.php

National Disaster Management Authority. (n.d.). *National School Safety Programme*. Government of India. https://ndma.gov.in/sites/default/files/PDF/school_safety/Final_NSSP_brochure%5B2%5D%20English.pdf

National Disaster Management Authority. (2025). *National campaign on school safety from fire*. Government of India. https://ndma.gov.in/sites/default/files/PDF/Reports/School_Fire_Safety_Report.pdf

National Institute of Urban Affairs. (2011). *India's urban demographic transition: The 2011 Census results*. Ministry of Housing and Urban Affairs, Government of India. https://mohua.gov.in/upload/uploadfiles/files/CensusResult_2011%5B1%5D.pdf

Samagra Shiksha. (n.d.-a). *About Samagra Shiksha*. Ministry of Education, Government of India. https://samagra.education.gov.in/about.html

Samagra Shiksha. (n.d.-b). *Framework for implementation: Samagra Shiksha—An integrated scheme for school education*. Ministry of Education, Government of India. https://samagra.education.gov.in/docs/Framework_IISE%20_F.pdf

Samagra Shiksha. (n.d.-c). *Inclusive education for children with special needs*. Ministry of Education, Government of India. https://samagra.education.gov.in/inclusive.html

UNESCO. (n.d.-a). *Artificial intelligence in education*. UNESCO. https://www.unesco.org/en/digital-education/artificial-intelligence

UNESCO. (n.d.-b). *SDG 4: Education 2030*. UNESCO. https://www.unesco.org/sdg4education2030/en

UNESCO. (2023). *Guidance for generative AI in education and research*. UNESCO. https://www.unesco.org/en/articles/guidance-generative-ai-education-and-research

UNICEF India, & Young Lives India. (2020). *Understanding child migration in India*. UNICEF India. https://www.unicef.org/india/media/3421/file/Child-migration-India2020.pdf

United Nations. (2015). *Transforming our world: The 2030 Agenda for Sustainable Development*. United Nations. https://sdgs.un.org/goals

Planning 21st-century schooling requirements in India: A state-level framework for infrastructure, teachers, digital readiness, inclusion, and learning outcomes presents a practical policy framework for rethinking how Indian states plan, finance, implement, and monitor school education. Moving beyond traditional school planning based only on schools, classrooms, teachers, and enrolment, the monograph argues that future-ready schooling requires a broader and more integrated estimation approach.

At the centre of the book is the 21st-Century Schooling Requirement Estimation Framework, or 21-SREF Model. This original model organises schooling requirements into eight pillars: access and enrolment, physical infrastructure, teacher availability and capacity, digital readiness, inclusion and equity, learning outcomes and assessment, health/safety/socio-emotional wellbeing, and governance/finance/monitoring.

Written in a formal and implementation-focused style, the monograph is designed for policymakers, NITI-type institutions, state education departments, SCERTs, DIETs, BRCs, CRCs, school leaders, teacher educators, NGOs, education planners, and researchers. It provides planning logic, estimation tools, policy matrices, monitoring indicators, implementation roadmaps, and practical appendices for field use.

The book argues that a school system cannot be considered future-ready merely because children are enrolled or infrastructure exists. Schools must be safe, inclusive, digitally enabled, professionally supported, learning-focused, climate-resilient, and governed through reliable data. The monograph connects this transformation with NEP 2020, SDG-4, learning outcomes, inclusive education, digital readiness, state-level planning, and the national vision of Viksit Bharat 2047.

This volume is part of the Education for Viksit Bharat 2047: Policy Monograph Series and is intended as a resource for strengthening India's school education system through evidence-based, equity-oriented, and future-ready planning.

Towards an Equitable, Inclusive and Future-Ready Education System

Scholars Choice Press
An imprint of Educators Plus
India

ISBN 978-81-65131-9-7