Reform and Perform

NEAT 3.0

National Educational Alliance for Technology (NEAT) 3.0, a single platform to provide the best-developed ed-tech solutions and courses to students of the country, has been launched recently. NEAT is an initiative to provide the use of best-developed technological solutions in the education sector to enhance the employability of the youth on a single platform for learners' convenience. These solutions use Artificial Intelligence (AI) for a personalised and customised learning experience, for better learning outcomes and skill development in the niche areas.

NEAT will be a game-changer in bridging the digital divide, especially among the economically disadvantaged students and also in fulfilling the knowledge-based requirement of India and the world. Around 58 global and Indian startup ed-tech companies are onboard NEAT and are offering 100 courses & e-resources for bettering learning outcomes, developing employable skills, and overcoming learning loss. More than 12 lakh socially and economically disadvantaged students have received free ed-tech course coupons worth over 253 crore under NEAT 3.0.

In today's time, e-content & resources and Digital frameworks like NEAT are a step in the right direction in minimising learning loss. Integrating NEAT with Skill India, to tap the opportunities in emerging areas of skill, will boost employability and prepare our youth for the future. All India Council for Technical Education (AICTE), MoE is acting as the facilitator in the process while ensuring that the solutions are freely available to a large number of socially and economically backward students.

AICTE-prescribed technical books in regional languages were also launched during the event. Learning in regional languages can help develop the critical thinking capacity and enable youth to become global citizens. Diverse regional languages are the country's strength and harnessing them is the key to building an innovative society.

Source: PIB

IN THIS ISSUE

REGULARS

NEXT ISSUE - UNION BUDGET

– **G.V. Srivatsava Raju**
Hyderabad

I am Regular viewer of Yojana Magazine. I regularly see the photographs in Yojana magazine. I am political science student of 11th class last magazine on Public – Administration attracted me so much. That magazine reflected my text book.

I read about rainwater harvesting system in your magazine, I hope you will also bring magazines on History of India, Polity of India.

Thanking You

Atmanirbhar Bharat

There is a very famous proverb that 'need is the mother of invention'. Atmanirbhar Bharat is need of the hour for Indian economy as well as for all Indians during Covid-19. Atmanirbhar Bharat is not only a term but it is a vision of our Prime Minister Narendra Modi to enable India to overcome from this difficult time. It is actually the vision to make India and Indians self reliant by starting production of all mandatory items locally. Vocal for Local is also integral of Atmanirbhar Bharat Abhiyaan. Atmanirbhar Bharat Abhiyaan has promoted various innovations and new product development in India. By this, import of India will decrease and export will increase, thus in the long run our trade deficit will reduce. Export promotion will help us save and earn more foreign currency. Atmanirbhar Bharat package will help in growing Indian small and medium enterprises and the manufacturing sector will flourish. Thus, this vision is a true way to nurture and flourish India's innovations and to make India a Global Leading country in all terms.

– **Nita Mishra**
Asansol, West Bengal

Recognising India's Efforts

I would like to express what the monthly magazine 'Yojana' means to me and quite possibly, to others like me. Reading Yojana is like taking a journey through the heartland of India. Its comprehensive coverage of multiple dimensions of an issue provides us with a greater understanding of how India is moving forward. It is an emotional ride, from recognising an issue, reading about many efforts to solve it, followed by exhilaration at realising positive outcomes as fruits of labour. It makes us appreciate the silent machinery of bureaucracy, often misunderstood and undervalued, working day and night

to support and strengthen India's growth. It also helps us recognise the resilience of our heartland, fighting all odds to emerge better and stronger. Thank you for helping us connect with our country at such great level.

– Anjali Singh
Delhi

Useful for All

People who read Yojana, are really thankful to its makers. Really useful for the aspirants who are preparing for UPSC, as knowing new things really makes one bright. Many aspirants suggest Yojana to new aspirants. Firstly, I wondered why, then I understood the reason when I finished my reading. My response was that this magazine is really useful for all. Thank you to the entire team of Yojana.

– Deepika Manipatruni
Srikakulam, Andhra Pradesh

Covers Multiple Dimensions

I am one of the recent readers of Yojana. The book is easy to read and understand. And it also covers all topics regarding updated content. The recent published topic 'Atmanirbhar Bharat' in December 2021 was superb. It visualises all dimensions. The book is excellent to crack civil services. Thank you to the entire team of Yojana.

– Mamilla Ganesh
Anantapur, Andhra Pradesh

Interactive and Valuable

Dear Yojana team, all I want to say is that, your work for collecting information about the current topics and the way you represent all are amazing. I must say that it's not just coverage of topics for competitive exams, it's also a great platform to know the government schemes and remain up-to-date with the nation's information. As you wrote in December about 'Atmanirbhar Bharat' and about water, we came to know how water is so important for us as government is trying to provide clean water to all the rural and urban areas. I hope we all might know that how women stand in the queue for collecting the water. In starting pages, you wrote about "GI-Tagging of Rural Products". It is explained well and the way of presenting in the form of photos and diagrams is interactive and valuable. I feel so glad that I am reading this magazine since 2017 and I really want to continue reading it. Thank you so much!

– Rinku Ram
Chamba, Himachal Pradesh

Builds Perspective

Firstly, I would like to thank Yojana team for this long awaited issue on Atmanirbhar Bharat (December 2021). The articles written by respective experts give us in-depth understanding of the issue. Building our own opinion on the issues is an indispensable part in CSE preparation for which Yojana helps us. Also I would like to suggest topics like Climate Change, United Nation etc.

– Rutik Mohite
Solapur, Maharashtra

Powerhouse of Knowledge

I am an architect and an interior designer, and I'm following Yojana Magazine from past 5 years. Yojana gives me a better understanding of socio-economic problems the country and its people are facing today, and it makes me think of out-of-the-box solutions, not only in terms of my background like how Swachh Bharat scheme can be further improved, ramps of public buildings can be made better, but other aspects as well. To conclude, Yojana serves as a powerhouse of knowledge, without any fake news or propaganda.

– Saikrishna Kumbham
Hyderabad, Telangana

Transforming Learning

With the arrival of National Education Policy (NEP) 2020, there has been a vital shift in the Indian education system aligned with the aspirational goals of the 21st century. The policy envisages a complete overhaul of teaching-learning process from the traditional teacher-centred to learner-centric approach; to ensure the holistic development of students by accentuating their creative potential. The policy stresses on the core principles that education must develop not only the cognitive skills– both 'foundational skills' of literacy and numeracy, and 'higher-order' skills such as critical thinking and problem solving, but also social and emotional skills– also referred to as 'soft skills', including cultural awareness and empathy, perseverance and grit, teamwork, leadership, communication, etc.

NEP 2020 emphasises on universalisation of school education and maximising enrolment. There is a special focus on Early Childhood Care and Education (ECCE). Foundational learning accounts for children's ability to read and meaningfully comprehend, as well as use basic mathematical operations in real life. With this aim, NIPUN Bharat Mission has been launched to create an enabling environment for every child, to achieve the desired learning competencies in reading, writing, and numeracy at the end of Grade III in the next five years.

Visualising assessments as an ongoing process that is instrumental in understanding how students think and learn, NEP 2020 has put in place certain fundamental reforms in the purpose, design, and implementation of students' assessment. It also suggests redesigning of Board examinations to make them more valid, reduce academic stress and pressure, and de-emphasise coaching culture.

There is significant impetus on capacity building of students, teachers, and institutions. Being multidisciplinary, institutions will restructure the pedagogy, permitting the scope for choices of subjects to students. It is also expected that affiliated colleges will gradually phase out, giving ways to multidisciplinary universities and colleges by 2035. Certainly, everyone recognises the key role teachers play. NEP recommends that teachers be given continuous opportunities for self-improvement and to learn the latest innovations and advances in their profession. Accordingly, scope of teacher education has also been revamped in line with the current trends, including its structure, regulation, and governance.

Ensuring equitable and inclusive quality education for all, the policy reaffirms the commitment of bridging up the social category gaps in access, participation, and learning outcomes at all levels of education. The policy considers equity as an inclusive notion focusing on Socio-Economically Disadvantaged Groups (SEDGs) and areas.

The policy is both global and local in its outlook and intent. It makes a significant headway from earlier policies by putting quality education as the topmost agenda, strengthening the foundations of education, catering to the educational needs of the most disadvantaged, and making India a global leader in education. This issue of Yojana intends to be a part of the comprehensive discussion about vision and purpose of NEP, and its increased relevance in the post-pandemic world. We hope the insights from subject experts and stakeholders will broaden the understanding of our readers about the transformative scope of NEP 2020. ❑
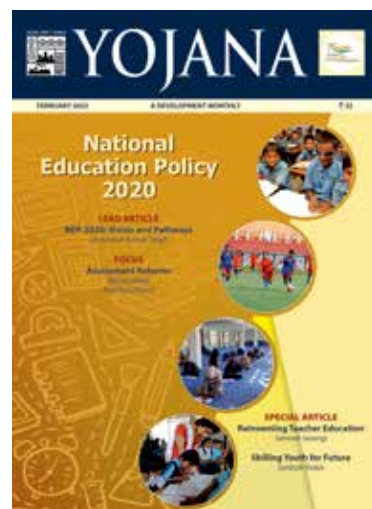
NEP-2020: Vision and Pathways

Dr Avinash Kumar Singh

After thirty-four years since the launch of the National Policy on Education in 1986, a new National Education Policy-2020 has been announced and is currently under implementation. The National Education Policy envisions to have an education system that is second to none with equitable access to the highest quality education for all learners regardless of social or economic background. The vision of NEP-2020 is in sync with Goal 4 of the UN Sustainable Development Goal (SDG4), which seeks `to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all'.

The New Education Policy, aligned with India's aspirational goals of 21st century, proclaims to transform India into a global knowledge superpower. Besides being global in its outlook, the policy is also India-centric, as it intends 'to instill among the learners a deep rooted pride in being Indian, not only in thought, but also in spirit, intellect, and deeds, as well as to develop knowledge, skills, values, and dispositions that support responsible commitment to human rights, sustainable development and living, and global wellbeing, thereby reflecting a truly global citizen.'[1] Based on the vision, NEP-2020 has set 2040 as the deadline to fulfill the goals, targets, and pathways so that the child who gets entry into the education system under the new

policy would exit with having gone through the new policy processes. The distinctive thrusts of the new education policy are as follows:

Universalisation of Education

The New Education Policy aims at universalising school education (achieving 100% GER i.e. Gross Enrolment Ratio in preschool to secondary level) by 2030[2] and higher education (increasing the GER in higher education to 50 %) by 2035[3]. The universalisation of goals and targets need to be seen in terms of areas and groups, as the states and groups within a State are at different levels of educational attainment. It is expected that universalisation of school education will provide scope for maximising

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National Education Policy-2020: Principles

- **recognising, identifying, and fostering the unique capabilities** of each student;

- **according** the highest priority **to achieving Foundational Literacy and Numeracy** (FLN) by all students by Grade 3;

- **flexibility** in their own paths in life according to their talents and interests;

- **no hard separations** between arts and sciences, between curricular and extra-curricular activities, between vocational and academic streams, etc.;

- **multidisciplinarity** and a **holistic education** across the sciences, social sciences, arts, humanities, and sports for a multidisciplinary world;

- **emphasis on conceptual understanding** rather than rote learning and learning-for-exams;

- **creativity and critical thinking** to encourage logical decision-making and innovation;

- **ethics and human & Constitutional values;**

- **promoting multilingualism and the power of language** in teaching and learning;

- **life skills** such as communication, cooperation, teamwork, and resilience;

- **focus on regular formative assessment for learning**;

- **extensive use of technology** in teaching and learning, removing language barriers, increasing access for Divyang students;

- **respect for diversity and respect for the local context;**

- **full equity and inclusion** as the cornerstone of all educational decisions;

- **synergy in curriculum** across all levels of education from early childhood care and education to school education to higher education;

- **teachers and faculty as the heart of the learning process;**

- a **'light but tight regulatory framework'** to ensure integrity, transparency, and resource efficiency of the educational system;

- **outstanding research** as a requisite for outstanding education and development;

- **continuous review** of progress based on sustained research;

- **a rootedness and pride in India**, and its rich, diverse, ancient, and modern culture and knowledge systems and traditions;

- **education is a public service**; access to quality education must be considered a basic right of every child;

- **substantial investment** on public education system as well as the encouragement and facilitation of true philanthropic private and community participation;

(Source: NEP-2020, p. 5-6)

enrolment in higher education. Besides providing universal access and enrolment, the policy also suggests to undertake measures to bring back drop-out children to schools and to prevent this from occurring further.

Curricular and Pedagogical Restructuring

Following Liberal Education approach, NEP-2020 envisages restructuring of the existing curriculum and pedagogy in both school and higher education, to realise the vision and fulfill the policy's goals and targets. It recommends modifying the existing 10+2 pedagogical structure in the form of a new structure of 5+3+3+4, having a strong base of Early Childhood Care and Education (ECCE) from the age of 3 years. The policy recommends universal provisioning of quality early childhood care and education based on strong pedagogical components to be achieved by 2030. NEP considers the 3-8 years age as the foundational stage of a child critical for his/her overall development. Every student should attain foundational literacy and numeracy (FLN) by grade 3. The curricular and pedagogical structure of school education should match with developmental needs and interests of learners at different stages of their development corresponding to the age ranges/grades[4].

The main thrust of structural reforms in higher education is transforming higher education institutions into large multidisciplinary universities, colleges, and knowledge hubs. Multidisciplinary education based on liberal education is an academic and pedagogical approach to develop multiple capacities in the students by integrating formal and informal learning opportunities such as teaching, research, and community engagements and promoting interdisciplinary perspective academic practice.[5] Being multidisciplinary, institutions will restructure the pedagogy, permitting the scope for choices of subjects to students and it is also expected that affiliated

> The curricular and pedagogical structure of school education should match with developmental needs and interests of learners at different stages of their development corresponding to the age ranges/grades.

colleges will gradually phase out giving ways to multidisciplinary universities and colleges by 2035. The policy also recommends building world class multidisciplinary Higher Education Institutions (HEIs) called Multidisciplinary Educational Research University (MERU).

Equity and Inclusion in Education

NEP 2020 envisages achieving Equitable and Inclusive quality education for all. It reaffirms the commitment of bridging up the social category gaps in access, participation, and learning outcomes at all levels of education. The policy considers equity as an inclusive notion focusing on Socio-Economically Disadvantaged Groups (SEDGs) and areas.[6] Recognising the large intra-state variations, the policy recommends declaring the regions with large populations from the disadvantaged groups as Special Education Zones (SEZs), where all the schemes and policies can be implemented more effectively. The policy suggests implementing suitable strategies to address the problems of access, participation, and learning outcomes for the SEDGs and to eliminate different types of disparities (both group and area specific) in both school and higher education. Promoting equity in learning outcomes from early childhood care and education through higher education is one of the major goals of NEP-2020.[7]

Reforms for Effective Governance

Following the 'light but tight approach', the policy sets up transformative agenda in governance for achieving the goals and targets in education. In school education, some of the major reforms include: a) setting up school

> NEP-2020 advocates for greater internationalisation in education by creating avenues for having larger number of international students studying in India and providing opportunities to students interested in studying abroad.

complexes/clusters, b) setting up of school standards and authority, and c) reforming school examination boards. The governance reforms in higher education include setting up a single regulator on Higher Education Commission of India (HECI) with four verticals for regulation, namely National Higher Education Resource Centre (NHERC) accreditation, National Assessment and Accreditation Council (NAAC), funding Higher Education Grants Council (HEGC), and academic setting of General Education Council (GEC). The idea behind creating a single regulator is to initiate the problems of over-regulation in higher and professional education.[8]

Standard Setting and Accreditation for School and Higher Education

As far as Standard Setting and Accreditation for School and Higher Education is concerned regarding school education, the NEP-2020 advocates for the institutionalisation of effective quality assurance and accreditation system by establishing State School Standards Authority (SSSA) as an independent state wide body; in higher education the policy envisages to set up NAC as one of the verticals of HECI. It is expected that the new governance will make the system more transparent and accountable.

Vocational Education

NEP envisages strengthening the skills component in general education and raise the status of vocational education by integrating it into the mainstream formal education. It is expected that by 2025, over 50% of the

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Equity & Inclusion
through
Facilitating Children with Special Needs (CwSN)

- Target: All disabled learners enrolled in CBSE school
- To create an ecosystem for appropriate assessment & certification of disabled learners
- Motivate them to complete their studies right up to the Senior Secondary level
- Guidelines developed to facilitate each disability for board examinations
- Common exemptions for Class X board exams for disabled examinees include exemption from third language & flexibility to choose subjects

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Joyful Learning
through
School Innovation Ambassador Training Program (SIATP)

- Targeted at School Teachers of CBSE & Eklavya Model Residential Schools
- To train teachers on five modules
- Design Thinking & Innovation, Idea generation & Ideal hand-holding, Intellectual Property Rights, Product / Prototype development and Finance, HR & Sales
- To make children adept at handling real-life situations

learners through the school and higher education system will have exposure to vocational education.[9]

Quality Academic Research

The policy advocates for developing a strong culture of research and knowledge creation to make India a knowledgeable superpower. It calls for setting up the National Research Foundation (NRF) with a special mandate to foster research and innovation in universities and colleges including interdisciplinary research.

Use of Technology

The new NEP 2020 proposes to set up a National Educational Technology Forum (NETF) to serve as a platform to better the ideation process, improve learning, assessment, planning, and administration.

This policy aims to see that technology is appropriately integrated into all levels of education for: improving teaching, learning, and evaluation processes; supporting the preparation of teachers and their continuous professional development; enhancing educational access to disadvantaged groups; and streamlining educational planning, administration, and management.

Raising Public Expenditure on Education

The policy commits to raise the public expenditure on education to the recommended level of 6% of GDP as envisaged by the 1968 Policy.

The policy also identifies the following key long-term significant areas for financing to cultivate an education system; (a) universal provisioning of quality early childhood care education; (b) ensuring foundational literacy and numeracy; (c) providing adequate and appropriate resourcing of school complexes/clusters; (d) providing food and nutrition (breakfast and midday meals); (e) investing in teacher education and continuing professional development of teachers; (f) revamping colleges and universities to foster excellence; (g) cultivating research; and (h) extensive use of technology and online education.

Internationalisation in Education

NEP-2020 advocates for greater internationalisation in education by creating avenues for having larger number of international students studying in India and providing opportunities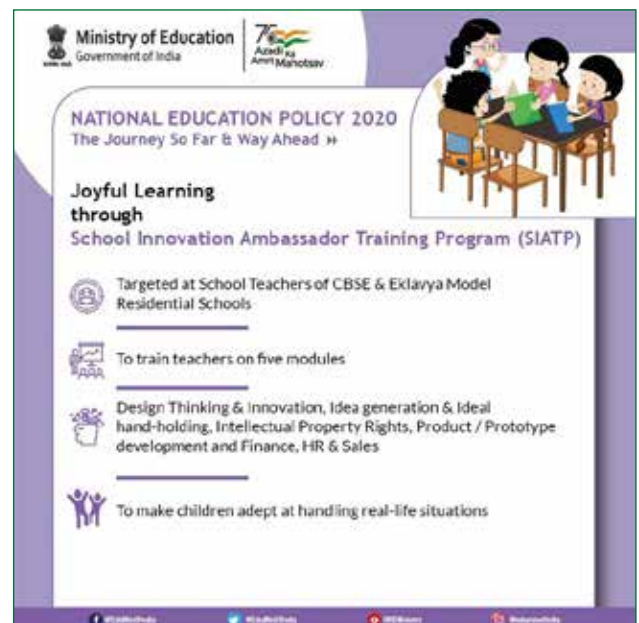 to students interested in studying abroad. NEP 2020 points out that high performing Indian universities will be encouraged to set up campuses in other countries, and similar selected universities, e.g., those from among the top 100 universities in the world will be facilitated to operate in India. A legislative framework

> The gaps between the current and desired educational outcomes are to be bridged by major systemic reforms and suitable strategies/programme interventions from early childhood through higher education. The policy is both global and local in its outlook and intent.

facilitating such entry will be put in place, and such universities will be given special dispensation regarding regulatory, governance, and content norms on par with other autonomous institutions of India. [10]

Promotion of Indian Languages, Art and Culture

NEP-2020 advocates the use of Indian languages, art, and culture at all levels of education. The policy has proposed establishing an Indian Institute of Translation and Interpretation (IITI) to promote Indian languages. It has also been pointed that Sanskrit will be mainstreamed in schools and higher education institutions. The policy also makes it explicit that proficiency in Indian languages will be included as part of qualification parameters for employment opportunities.

Conclusion

Thus, the vision of the National Education Policy-2020 is quite comprehensive and long standing. Keeping in mind the comprehensive nature of the vision and principles of the policy, pathways have been chalked out to realise the associated goals and targets. The gaps between the current and desired educational outcomes are to be bridged by major systemic reforms and suitable strategies/programme interventions from early childhood through higher education. The policy is both global and local in its outlook and intent. It makes a significant headway from earlier policies by putting quality education as the topmost agenda of educational reforms, strengthening the foundations of education, catering to the educational needs of the most disadvantaged, and making India a global leader in education. ❑

References

1. *NEP-2020, p.6*
2. *NEP 2020, Section 3, para 3.1*
3. *NEP 2020, Section 10, para 10.06*
4. *NEP 2020, para 4.1, p.11*
5. *NIEPA, 2020, p.114; Kasturirangan,2021*
6. *NEP 2020, p. 24-25*
7. *NEP 2020,p.3*
8. NIEPA, 2021, p.152
9. NIEPA, 2020, p.129
10. NEP, 12.8, p.39

Endnotes

1. *2020'* Ministry of Human Resource Development, New Delhi.
2. Kasturirangan, K 2021 *`Liberal Education – A 21st Century Initiative'*, Fifteenth Foundation Day Lecture, NIEPA, New Delhi, 11th August

Assessment Reforms

Manoj Ahuja
Aanchal Chomal

High quality educational assessment is central to any well-functioning schooling system. Such a system would be typically characterised with assessments that are valid, reliable, fair, and equitable for its wide diversity of student population. However, at present, across a majority of school systems in the country, assessments are commonly perceived as examinations or tests that end up measuring a very narrow range of competencies across subjects and fail to accurately measure the overall potential of the students. Such a system creates undue pressure, stress, and anxiety among students and reduces the goal of education to merely scoring high marks in key examinations.

everal national level committees and policies have highlighted the aspect regarding examinations being extremely content heavy, leading to rote memorisation and narrowing down of the syllabus that gets transacted in schools. In such a situation, assessments do not live up to the potential they have in ensuring quality education.

What is needed today is a progressive system of assessment that could lead the path towards quality education in schools. Assessments need to be more comprehensive, to measure not only learning of the textbook, but also other abilities like analysis, critical thinking, creativity, socio-emotional skills, etc. In this context, the National Education Policy (NEP) 2020 suggests certain fundamental reforms in the purpose, design, and implementation of assessment. To begin with, the very culture of assessment in our schooling system must change to become more *constructive, developmental, and learning-focused*. Assessment needs to be visualised as an ongoing process that is instrumental in understanding how students think and learn. Evidences about student learning emerging from assessment data should be used for analysing and interpreting how it is best to address students' learning needs. Such a system of ongoing assessment will also enable teachers in introspecting about the effectiveness of teaching strategies by providing valuable insights on what and how to change. It will also provide inputs to schools on how much they are able to function as learning institutions by reflecting on their processes, their culture, and

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Focus on
Competency-Based Education & Assessment Reforms

Key Points :

- Targeted at students & teachers of the classes I to XII
- The curriculum is being redefined in terms of Competencies & Learning Standards/Assessment Frameworks
- Assessment Practices to include competency-based test questions
- Capacity Building of teachers to promote understanding and competency-based education in classrooms
- Development of Teachers' Resources to implement active student-centric pedagogy

NATIONAL EDUCATION POLICY 2020
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Reforms in examination to encourage Holistic development of learner

Aims and Benefits

- Improvement exams for students to improve their results
- The new marking scheme that gives priority to creative, correct, and relevant answers
- Subjects offered at two levels to reduce stress in students
- Choice in Mathematics at senior secondary level
- Internal Assessment based on competencies such as Quizzes, Oral Tests, Projects, Portfolios and Subject Enrichment Activitie
- Facilitating sportspersons during exams to promote talent in sports
- Using Art for reducing stress
- Doing away with the word "Fail" and decided to use "Essential Repeat"

curriculum. At the systemic level, thoughtfully designed and administered assessments will provide inputs to policy-makers about the overall performance of the ecosystem with reference to key learning in the context of specific geographies and diverse socio-economic groups. The role of assessment to enable learning must be center-stage– for this, all involved, whether teachers, schools, parents, system must understand that assessment is to enable learning of students and help them realise the goals of education.

The policy also makes some concrete recommendations for transforming Board examinations. Any effective schooling system should have a very credible and robust mechanism of certification. Boards serve the purpose of such certifications after 10-12 years of schooling. Over the years, policies have pointed out key issues in the design and implementation of Board examinations, and made specific suggestions. NEP 2020 also suggests redesigning of Board examinations to make them more valid, reduce academic stress and pressure, and de-emphasise coaching culture. The Board examinations should primarily assess core capacities rather than content memorisation. The focus of such certification examinations should be on holistic learning and development rather than a narrow range of content or textbook material learnt in a single stream. In this context, NEP 2020 offers choice and flexibility to students to reduce the stress and anxiety currently associated with Board examinations.

Concomitant with the above suggested reforms, NEP 2020 also discusses the need for a holistic,

> The role of assessment to enable learning must be center-stage– for this, all involved, whether teachers, schools, parents, system must understand that assessment is to enable learning of students and help them realise the goals of education.

360-degree, multidimensional report that reflects in great detail the progress as well as the uniqueness of each student in the cognitive, affective, and psychomotor domains. While this may appear to be a massive mandate, implementing these reforms will be foundational in transitioning to a high quality assessment system. In achieving this, we need to adhere to certain principles that are briefly outlined below:

Building consensus among stakeholders is the first principle. What is often found missing in our education system is conversations among institutions and key stakeholders. Such conversations trigger new ideas that enable active collaborations. Institutions need to actively collaborate and maintain continuous dialogue. For example, NCERT, SCERT, and Boards should together work towards reforming the curriculum, the syllabus, and associated assessments. It will be impossible to change one in the absence of reform in the other. It is also important to recognise the need for a deep alignment between curricular goals and assessment processes. Therefore, it is critical that institutions developing these approaches work collaboratively. Such collaboration need not be limited to only government institutions. Competent and well-meaning organisations, universities, and researchers should also be consulted regarding such decisions.

Second, we need **agreement among stakeholders on what are the core and essential competencies** that must be assessed through various systems of assessment. To enable this, we need contextualised learning standards, competency frameworks,

and assessment processes for all subjects. The learning standards will provide a common vocabulary among stakeholders. These standards must take into account higher order thinking skills, 21st century skills, and socio-emotional skills that are needed for holistic development of students. Such standards and frameworks must provide adequate direction to teachers, curriculum designers, and Board examination paper setters in assessing appropriate and relevant competencies. This will also enable equivalence across Boards, something that is sorely missing in our schooling system today. It is practically impossible to compare performance across Boards in the absence of such commonly shared frameworks of standards and processes. These standards and processes need to be developed collaboratively and disseminated among key stakeholders.

Third, in the context of Boards, any change in the policy envisages a shift in assessment, both at the classroom and school level as well as the systemic level. Therefore, **generating awareness among key stakeholders**, such as teachers, parents, school principals, block/district officers, etc., is necessary to successfully implement these changes. It is important that the rationale and motivation for any change in Board Policy be explicitly communicated to all stakeholders impacted by these changes.

Fourth, key stakeholders entrusted with the task of assessment and evaluation must be provided **ongoing capacity building** on various aspects of assessment. To enable teachers to conduct more reliable and valid assessments, comprehensive assessment guidelines, handbooks and manuals, exemplar assessment tools and processes must be available. Teacher capacity for designing, implementing, and using valid and reliable assessments must be strengthened through regular training. Teacher capacity to analyse, report, and use results of assessment will also need to be developed. As teachers are the primary evaluator of the student, they require freedom to take independent decisions about teaching-learning and assessment processes based on their individual needs. Support from the school head is needed for the teacher to exercise this autonomy. The trust, support, and encouragement from the latter will enhance the level of motivation of teachers and they will feel more confident using the new approach.

> NEP 2020 also suggests redesigning of Board examinations to make them more valid, reduce academic stress and pressure, and de-emphasise coaching culture. The Board examinations should primarily assess core capacities rather than content memorisation.

In addition to teachers, training and capacity building of paper setters, evaluators, and moderators of Board examinations should also be undertaken to enable these improvements.

In its efforts to facilitate assessment reforms, CBSE has been making ongoing changes. It has provided training to its teachers on various pedagogic and assessment reforms suggested in NEP 2020. It has undertaken various definitive measures in the past few years to include key competencies in Board examinations. It has conducted an exhaustive review of its certification examination (Board) papers to evaluate the reliability and validity of the test instruments. In order to support teachers with implementing competency based education, learning standards framework for various subjects at secondary, and senior secondary level have been developed in alignment with the NCERT learning outcomes. In addition to that, to provide equal attention to the growth of learners in all aspects of development, Holistic Progress Cards (HPCs) have been developed. The HPC will form an important link between the home and school, and will capture the uniqueness of each learner in the cognitive, affective, and psychomotor domains as opposed to the conventional report cards which measure the achievements of children in quantitative terms, only once in an academic year. It has also initiated efforts to build capacity of Board personnel in standards and processes of test development and standardisation. The handbooks, guidebooks, and other reference materials have been developed to be used as reference materials for test developers. CBSE has collaborated with various government and not-for-profit institutions in instituting these changes.

Assessment reform has been in the discourse for several decades now. NEP 2020 reiterates key areas of reforms from reports and policies that preceded it. Therefore, the need to build on what exists, to learn from what has worked before, and the lessons learnt are vital. We need to be creative and innovative in our efforts and solutions to transform the way assessments are perceived and used across our country. The continuity of effort towards the envisaged processes and systems must be the basis of all action– creating repositories of best practices will enable consolidation of efforts, as will dialogue and collaborative action across institutions.   ❑

> Teacher capacity for designing, implementing, and using valid and reliable assessments must be strengthened through regular training. Teacher capacity to analyse, report, and use results of assessment will also need to be developed.

Reinventing Teacher Education

Santosh Sarangi

India's aspiration to become a knowledge society, reverberating with educated and skilled individuals of high standards that are required to meet the challenges of the 21st century will require us to ensure a strong foundation to our school education system. Based on the principles of equity, quality, accessibility, and affordability, the National Education Policy, 2020 brings the focus back on the children as well as teachers.

The National Education Policy's stated goal is to "reinstate" teachers as the "most respected members of our society." Empowerment of teachers remains a recurrent theme in the policy, and it is understood that this can be achieved by ensuring their "livelihood, respect, dignity and autonomy", while ensuring quality and accountability.

Evolution of Teacher Education

In the ancient times in India, teaching in the pristine environs of '*gurukuls*' was truly multidisciplinary as it focussed on teaching life skills, martial skills, and imparting the teaching of "Vedas". A formal system of teachers' training was introduced in India during the spread of Buddhism. The monastic system was prevalent in which every learner was to be placed under the supervision and guidance of a preceptor (*Upajjhaya*).

The current style of schooling and teaching emerged during the British rule in India. Inspired by the Victorian schooling system, this system focused on a behaviourist paradigm where education was concerned with preparing students to be disciplined, English-speaking clerks, to submissively execute the tasks of the British administration. It prepared teachers too as mechanics mainly concerned with classroom teaching.

There has been a slow paradigm shift in the system of teacher education in India, with the successful introduction of National Curriculum Framework (NCF)-2005, National Curriculum Framework for Teacher Education (NCFTE) 2009, and Right to Education Act (RTE), 2009. Over time, the focus of the system has shifted away from disciplinarian, rote memorisation, to a collaborative construction of knowledge. Following the NCF 2005 and NCFTE, 2009, the teacher education strategy is aimed at imbuing the teachers with skills to become facilitators of knowledge rather than gatekeepers of information as well as to make teaching less textbook-oriented and to connect knowledge to life outside the school..

The Justice Verma Commission in 2012 also stressed upon the need to improve the quality of pre-service and in-service teacher education. In 2014, the erstwhile Ministry of Human and Resource Development (MHRD) restructured its B Ed. programme by doubling the duration of the programme to two years. The new teacher education curriculum, designed by the National Council for Teacher Education (NCTE) introduced several changes in the curriculum such as Yoga education, ICT, peace and value education, health and physical education, environmental education and population education.

Challenges

Certain challenges with teacher education have continued to plague the sector including a system of training and recruitment that is churning ill-equipped and

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poorly trained teachers. As on date, the National Council for Teacher Education (NCTE) has given approval to 11139 D.El.Ed. Courses with intake capacity for 690840 students. Similarly, 9455 number of B.Ed courses have been registered with intake capacity of 937660 students. This is much higher than the annual requirement of new teachers which would be in the range of 3.5 to 4 lakh. Teacher Education Institutions have been working in isolation from rest of the Higher Education Institutions (HEIs). The multidisciplinary education, essential in developing a well-rounded personality, has been missing in the Teacher Education Institutions, which hitherto have been operating in a stand-alone manner. There has been no system to ensure only motivated and meritorious individuals select teaching as a profession.

Teacher Education Post NEP- 2020

Teachers, today, need to keep abreast with not only the curriculum in the textbooks but also the ever-evolving technology, changing market trends as well as continuously update themselves with the culture and beliefs that shape up the students of today. Teachers also need to play a more conscious role in supporting the parents, community, as well as school management in developing the child. As technology and blended learning becomes a part of our daily lives, and life skills like collaboration, creativity,

and curiosity become more essential to succeed as professionals and individuals in the world, teachers also need to mentor students and link real-life experiences and skills with the curriculum that they teach. Most importantly, teaching needs to be student-centric and joyful to foster the joy of learning and discovering among young people who will be leaders and entrepreneurs of the world. Keeping this in mind, NEP 2020 has proposed to revise and revamp aspects of teacher education, in line with the current trends, including its structure, regulation, and governance, through radical action so as to raise standards and restore integrity, credibility, efficacy, and high quality to the teacher education in the country. Recognising the 'power of teacher', NEP 2020 has put in place systemic reforms that would help 'teaching' emerge as an attractive profession of choice for bright and talented young minds and has put in place different interventions like Integrated Teacher Education Programme (ITEP), National Professional Standards for Teachers (NPST), National Mission for Mentoring (NMM) and at least 50 hours of Continuous Professional Development (CPD) for every teacher in a year.

The four-year Integrated Teacher Education Programme (ITEP), a dual-major holistic bachelor's degree programme offering B.A., B.Ed/B. Sc., B. Ed., and B.Com. B.Ed, will be the minimum entry requirement

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for teachers. Since, a multidisciplinary environment is key for the holistic development of individuals, multidisciplinary universities and institutions will be encouraged to establish education departments and run teacher education programmes, in collaboration with other departments such as psychology, philosophy, sociology, neuroscience, languages, arts, science, etc. All stand-alone Teacher Education Institutes (TEIs) will be required to transform to multidisciplinary institutions by 2030.

ITEP will teach cutting-edge pedagogy and offer a foundation in Early Childhood Care and Education (ECCE), Foundational Literacy and Numeracy (FLN), toy-based pedagogy, stage-based pedagogy, inclusive education, and a comprehension of India and its values/ethos/art/traditions, among others. In-classroom training and internships will also form an essential part of the programme. Teachers are expected to have good knowledge of the social, physical, emotional, cognitive, moral, and aesthetic development of the child as well as the experience of using the kind of pedagogy, content, medium of instruction as well as learning approaches that are relevant for her/his pupils. Teachers are also expected to understand the different needs of children who come from socially and economically disadvantages groups, students with special needs, and students who are gifted and require additional exposure and support than their peers.

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The roll out of National Professional Standards for Teachers (NPST) is a continuum in teacher education so far as it would cover expectations for the role of teacher at different levels of expertise/experience at different stages of his/her career, and the competencies required for that stage. As and when it fully evolves, linkage of career promotion, financial incentives, etc. will enable the teachers to strive for the next level of professional competence. A tech-enabled platform for self-assessment by teachers followed by a wide range of accrediting bodies (including SCERT/DIETs) will play a key role in assessing the beginner teacher, proficient teacher, expert teacher, and the lead teacher. Availability of online, offline, and blended modules to assist the in-service teachers in increasing domain expertise, deeper understanding of socio-psychological understanding, new methods in pedagogy, use of technology in education and leadership skills are being planned under the NPST. NPST which sets clear benchmarks of the skills, competencies, disposition, and knowledge required among teachers, will also infuse a spirit of increased professionalism and healthy competition among teachers to be the best in their field as well as set clear pathways for career progression.

National Mission for Mentoring (NMM) for schools will be operationalised by NCTE by creating a large pool of outstanding senior/retired faculty as potential mentors for mentees (school teachers, Principals, teacher educators, etc.), regardless of the age or position of the mentor and mentee who will contribute towards realising 21st century developmental goals of our nation. Mentoring is a process for the informal/formal transmission of knowledge and the psychosocial support perceived by the recipient as relevant to work, career, or professional development. NMM underlines the importance of the short and long-term mentoring/professional support to teachers and teacher educators.

The Department of School Education, NCERT are working with State Governments and SCERT to design short-term modules for assisting teachers in continuous professional development. NEP, 2020 envisages each teacher to undergo at least 50 hours of CPD per year. To realise the vision of NEP-2020, recently, NCERT under the aegis of the Ministry of Education (MoE), in collaboration with States/UTs and autonomous bodies have initiated the NISHTHA (National Initiative for School Heads' and Teachers' Holistic Advancement) integrated training programme 1.0, 2.0, and 3.0 online for different stages of school education–Teachers, Head Teachers/Principals, and other stakeholders in Educational Management and Administration.

Conclusion

It has been clearly established in the past that focus on pre-service and in-service teacher significantly impacts learning outcome of students. The multipronged approach adopted by NEP, 2020 is likely to revitalise the teacher education, allow bright students to opt for ITEP as a matter of choice rather than by chance, and interventions like NPST, NMM, CPD, etc. contribute to qualitative changes in teachers' pedagogic transaction. Simultaneously, efforts will also have to be made to phase out the sub-par teacher training institutes and D. El. Ed courses.

Dr APJ Abdul Kalam had said "Enlightened citizenship has three components: education with value system, religion transforming into spiritual force, and creating economic prosperity through development". We repose faith in our teachers to become torch-bearers for the young generation and shape India's development and sustained progress in the right direction. ❑

Skilling Youth for Future

Santosh Yadav

India is celebrating its 75th year of Independence and as our Hon'ble Prime Minister said "Today's youth, born in the 21st century, are going to carry India's development journey forward till the 100th year of Indian independence. That is why skill development of the youth of this new generation is a national need; it is the foundation stone for a self-reliant India".

Historically, vocational education in schools has been accorded high priority since National Policy on Education, 1986, and Centrally Sponsored Scheme (CSS) of Vocationalisation of Secondary Education was launched in 1988. Considering various bottlenecks in infrastructure, finance, and policy, the scheme was revised in 2011. The scheme was further revised in 2014 with the specific objectives of integrating vocational education with general academic education; enhancing the employability of youth; filling the gap between educated and employable; and decreasing the pressure on academic higher education. Currently, the scheme is being implemented as part of the Centrally Sponsored Scheme 'Samagra Shiksha' and has been aligned with the National Skills Qualification Framework (NSQF). The vocational subjects are introduced as an additional subject at the Secondary level and as a compulsory elective subject at Senior Secondary level. The scheme covers Government schools and Government aided schools.

An important part of this vision is providing skill education to millions of children in their school years in an integrated and holistic manner.

Under Samagra Shiksha, 14,435 schools have been approved to impart Vocational Education.

The implementation of Vocational Education has expanded almost 10-fold in the last six years, from only 960 schools in 2014-15 to 11,710 schools across the nation in 2021-22.

Currently, more than 1.5 million students are undertaking vocational education under Samagra Shiksha as a part of their Secondary and Senior Secondary curriculum with the help of a trained instructor facilitating learning in a trade specific laboratory setup within the school itself.

There are 62 skill courses available at Secondary and Senior Secondary level from 20 sectors such as Agriculture, Automotive, Beauty and Wellness, Construction, Electronics, Healthcare, IT/ITES, Media and entertainment, Plumbing, Retail, Tourism, and Hospitality etc.

CBSE has also been considering Vocational Education as an important component of holistic education. Vocational Courses offered by CBSE also provide wide choices for schools and students to choose from the relevant competency-based courses. Currently, about 3.5 million students are undergoing vocational courses in Secondary and Senior Secondary schools in the country, including the schools affiliated to CBSE.

As mentioned by the National Education Policy 2020, 'The aim of education will not only be cognitive development, but also building character and creating holistic and well-rounded individuals equipped with the key 21st century skills'. Though skill education in schools is one of the means towards this aim, NEP also mentions various challenges faced in its manifestation like perceived social status hierarchy associated with vocational education, lack of vertical mobility pathways
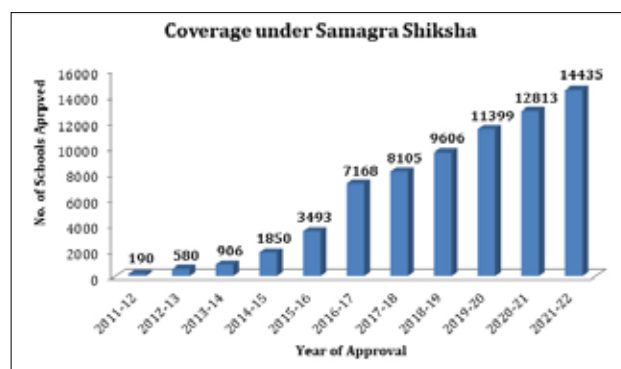
Coverage under Samagra Shiksha

No. of Schools Implemented

Year Wise Enrolment
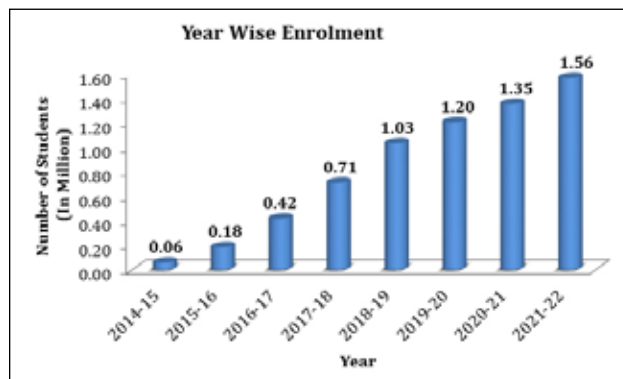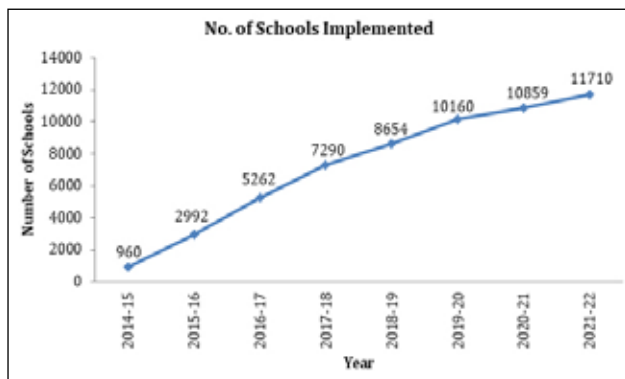
for its students of post 12th as well as lack of its integration with mainstream education at all levels.

Hence, NEP has also set a goal that by 2025, at least 50% of learners through the school and higher education system, shall have exposure to vocational education, making them learn at least one vocation and expose them to several more by integrating vocational education into all schools and Higher Education Institutions (HEIs) in a phased manner over the next decade. Importantly, NEP 2020 also encourages different models of Vocational Education in schools so that locally relevant skill education can be offered in appropriate manner.

Let us discuss several efforts that are being made to further the goals set by National Education Policy 2020.

Child at the Core

Any intervention of providing Vocational Education needs to keep the child at the Core and care about the outcomes that are being achieved for the child. Hence, there is an effort to provide age appropriate and customised Vocational education at each level of the school (Primary, Secondary and Higher Secondary).

Provisions have been made to provide exposure to Vocational Education at Upper Primary level (Grade 6-8), with an aim to provide opportunities to the students to orient themselves with the skills required for the various occupations in a sector and to equip them to make informed choices while selecting their subjects in higher classes. The pre-vocational education programme to be introduced from Grades 6 to 8 will mainly focus on activity-based teaching-learning. It will not only reduce the boundaries between the bookish knowledge and practical knowledge, but will also expose children to the skill requirements in the work areas, thus helping them to decide the future career path. These activities, would also foster the development of soft skills, such as aesthetic values,

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cooperation, teamwork, judicious use of raw materials, creativity, quality consciousness, etc. The desirable attitudes and values with respect to the appreciation of manual work and dignity of labour will be developed though activity-based learning, where discipline, persistence, and creativity will be achieved through teamwork and cooperativeness. Its implementation can be done with minimal resources available at the school or community level, as well as can be facilitated by regular teachers from all subjects, thus making it easily replicable at a larger scale.

At Secondary and Sr. Secondary level, NSQF compliant vocational courses are offered to the students alongwith other academic subjects. NSQF is a nationally integrated education and competency-based framework and organises qualifications according to a series of levels of knowledge, skills, and aptitude. Students not only engage in learning of the vocational skills in any particular sector in the school lab, guest lectures, and field visits but also gain real life experience of the particular vocation by participating in Internship/On-the-Job Training. The State Governments have been advised that Vocational courses are to be treated at par with other academic subjects and accorded a similar status in the scheme of subjects. Employability Skills module consisting of Communication Skills, Self-Management Skills, Information and Communication Technology Skills, Entrepreneurship Skills, and Green Skills has been made a mandatory part of the Vocational Courses.

This lifecycle-based approach for the student from Upper Primary to Grade 12, helps change the narrative of Vocational Education as "Applied Learning" as well as provides them with much needed "life skills", thus making them future ready for higher education, employment, or livelihood.

Adaptability

Another important aspect about vocational education that NEP aims

to address is integration of vocational education into all schools and Higher Education Institutions (HEIs) and this provides mobility between general and Vocational Education. In order to enable this, a unified credit accumulation and transfer framework is being devised for integration of academics and Vocational Education, and to facilitate the aforementioned mobility between the two. This will also help Vocational Education become more aspirational and remove the hard separation between the two.

Coverage and Convergence

With respect to achieving the goal of upto 50% of learners into Vocational Education, let us look at the models which are trying to increase the coverage of Vocational Education in this age group. Under Samagra Shiksha, new schools are being approved every year for the implementation of Vocational Education, where schools are provided with infrastructure and resources for providing Vocational Education in school premises. In addition, the Hub and Spoke model is being implemented where schools with requisite infrastructure will act as hubs and provide skill education to the children from surrounding spoke schools. Scheme guidelines provide for additional funds for such Hubs, as well as transportation of children between the hub and its spokes.

Covid-19 has forced implementers to look for agile solutions mostly enabled by the technology for various components of education including skill education. The need spans from availability of solutions, and digital infrastructure to digital capacity of the learners and implementers. AI For All is one of such initiatives which is co-developed with technology partners providing a self-paced online learning programme for AI (Artificial Intelligence) skills.

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Similar initiatives will provide more opportunities and increase coverage of Vocational Education exponentially.

States' Capacities

States and UTs are key partners in implementing Vocational Education in schools and appropriate adoption and implementation of national policies by the State/UT Governments is critical for reaching the goals set by National Education Policy. Currently, various components of Vocational Education are being supported by national agencies/institutions viz. Pandit Sunderlal Sharma Central Institute of Vocational Education (PSSCIVE), National Skill Development Corporation, Sector Skill Councils, etc.

Similarly, Capacities of State level institutions like State Council for Vocational Education and Training (SCVET), State Council of Educational Research and Training (SCERT) and its subordinate bodies (DIETs) can be developed for identification of locally relevant courses, adoption and/or development of textbooks, reference material, digital learning material, etc., as well as training of vocational trainers or instructors engaged in providing skill education at school level. Considering NEP 2020's focus on the principle of respect for diversity and respect for the local context, it becomes imperative to build States' capacity in terms of these components.

Significance

With ever changing socio-economic conditions, Skill Education also needs to keep up the pace and keep it relevant for students, industry, as well as communities. Skill courses, methodology, and assessments should remain effective for students' holistic growth as envisaged in NEP.

Vocational Education and Training (VET) or

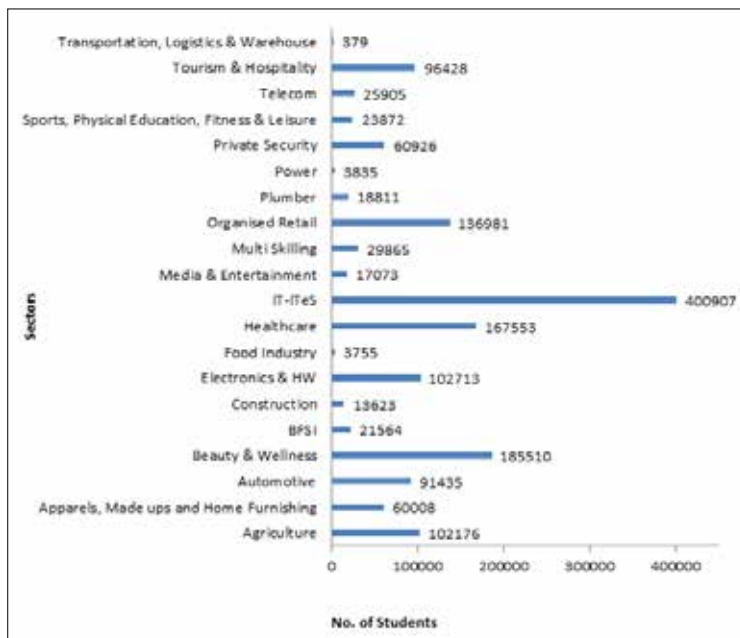## 25th National Youth Festival inaugurated in Puducherry

Prime Minister, Shri Narendra Modi inaugurated the 25th National Youth Festival in Puducherry, via video conferencing on 12th January, the birth anniversary of Swami Vivekananda, which is observed as National Youth Day every year.

Commenting on the young profile of the ancient country, the Prime Minister said, the world looks at India with hope and faith. Because, India's demography is young, and the mind of India is also young. India is young in its thoughts as well as in its consciousness. India's thinking and philosophy has always accepted change and there is modernity in its antiquity, he said. The Prime Minister said that the youth of the country have always come forward

in times of need, further adding that today's youth has a 'Can Do' spirit which is a source of inspiration for every generation. The Indian youth is a force to be reckoned with in the unicorn ecosystem all over the world.

Giving highlights of the National Youth Festival (12-16 January, 2022), Shri Anurag Singh Thakur, Minister of Youth Affairs & Sports, and Information & Broadcasting said, "During the youth festival, experts from different fields like Sports including Olympians, Environment, Climate, Technology, Entrepreneurship including leaders of start-ups, History, Natural farming will guide and share their experience with youth".

Source: PIB

Y-axis (Sector), top to bottom:
- Transportation, Logistics & Warehouse: 379
- Tourism & Hospitality: 96428
- Telecom: 25905
- Sports, Physical Education, Fitness & Leisure: 23872
- Private Security: 60926
- Power: 3835
- Plumber: 18811
- Organised Retail: 136981
- Multi Skilling: 29865
- Media & Entertainment: 17073
- IT-ITeS: 400907
- Healthcare: 167553
- Food Industry: 3755
- Electronics & HW: 102713
- Construction: 13623
- BFSI: 21564
- Beauty & Wellness: 185510
- Automotive: 91435
- Apparels, Made ups and Home Furnishing: 60008
- Agriculture: 102176

X-axis: No. of Students

Skilling Programmes will be successfully implemented if the supply of skilled manpower matches with the demand in the industry or the world of work. Therefore, it is important to assess the emerging requirements for knowledge and skills and match them through the VET or Skill Programmes.

The sectors which require a greater focus to meet the skill requirements of the future workforce are IT-ITeS, Renewable Energy/Green Energy, Power, Hospitality, Tourism, Electronics, Green Construction, Sustainable Mining, Green Logistics, Telecom, Green Agriculture, Disposable Plastics, and Chemicals.

Emerging trends, such as Internet of Things (IoT), machine learning, Artificial Intelligence (AI), and robotic process automation need to be explored besides the 21st century skills. Digital skilling should become the core programme of all the skill development activities. Artificially intelligent training delivery system needs to be developed and promoted so that the training can be customised according to the needs of the learner and its outreach be enhanced. We also need to work on Future Skills like Cloud Computing, Coding through Gamification, Additive Manufacturing (3D Printing) Operator, Low voltage EV service technician, Telematics data analyst, Drone Technology, Augmented Reality & Virtual Reality (AR-VR). CBSE has already introduced courses like Data Science, Coding, and AI.

Outcomes of skill education will be seen as students make transition from school to higher education, employment, or livelihoods. This transition needs to be enabled by creating awareness among students, industries, and institutions about available pathways, career counselling, and advocacy on vocational skills as an aspirational career pathway.

As highlighted by the Prime Minister, "Ramping up skills, particularly in trades, through Vocational Education has emerged as a recurrent and increasingly critical priority for India." Hence, the education ecosystem needs to offer skill education in schools that touch various crucial aspects of holistic education and overcome the social status hierarchy associated with Vocational Education. India is on its way to implement the key reforms for integrating and mainstreaming of vocational education with general education. At the same time, the role of all stakeholders at all levels becomes really crucial for ensuring that children are provided with vocational and life skills required for the 21st century. ❑

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Quality Education For All

Maneesh Garg

With the arrival of the National Education Policy (NEP) 2020, the paradigm shift in the teaching- learning process from the traditional teacher-centred to learner-centric approach, envisions to ensure the holistic development of students by accentuating their creative potential. The policy stresses on the core principle that education must develop not only the cognitive skills– both 'foundational skills' of literacy and numeracy, and 'higher-order' skills such as critical thinking and problem solving, but also social and emotional skills.

Quality education is a comprehensive term that includes learners, teachers, learning environment, appropriate curriculum, engaging pedagogy, learning outcomes, continuous formative assessment, and adequate student support. Quality is more a systemic trait rather than only a feature of instruction or attainment. As an overarching attribute, quality expresses the system's capacity to reform itself for enhancing its ability to address its own weakness and to develop new capabilities. It is not merely a measure of efficiency but also has a value dimension.

Attempt to improve quality of education will succeed only if it goes hand in hand with steps to promote equity and inclusion. This requires schools to be sufficiently equipped and prepared to address the diverse learning needs of all children with special focus on children belonging to SC, ST and Minorities, CwSN (Child with Special Needs), as well as the girl children. Another dimension of quality is to address the rural-urban divide and regional disparities as also the digital divide.
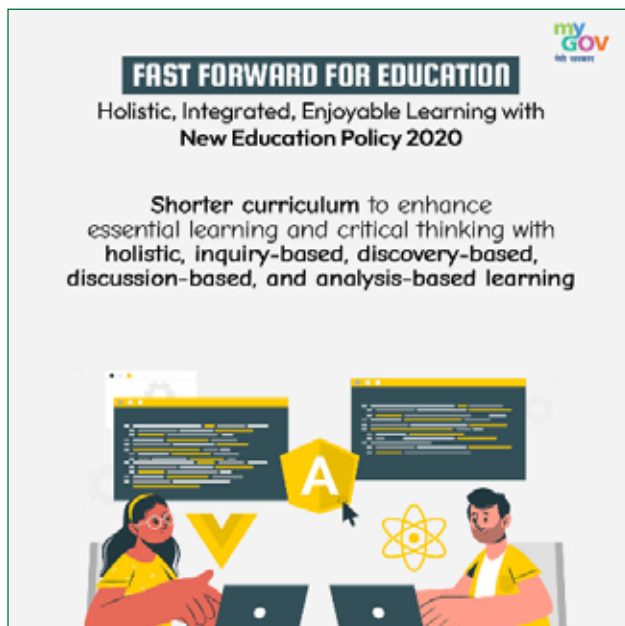
Learning should be holistic, integrated, inclusive, enjoyable, and engaging. In order to encourage holistic development and 21st century skills such as critical thinking, creativity, scientific temper, communication, collaboration, multilingualism, problem solving skills, ethics, social responsibility, and digital literacy– the curriculum, textbooks, pedagogy, and assessment need to be transformed.

As Education is in the concurrent list of the Constitution, the Government of India through the erstwhile Centrally Sponsored Schemes of Sarva Shiksha Abhiyan (SSA), Rashtriya Madhyamik Shiksha Abhiyan (RMSA), and Teacher Education (TE) has been aiming to– enhance access, promote equity through the inclusion of disadvantaged groups and weaker sections, and improve the quality of education for all. With the persistent efforts of the Central and State Governments, these schemes have significantly addressed major gaps in access to schooling and have contributed towards laying a foundation for an equitable quality school education system in the country.

The Right of Children to Free and Compulsory Education Act (RTE), 2009 also mandates good quality elementary education conforming to the standards and norms specified in the Act. The Section 29 of the RTE Act, 2009 provides for, an academic authority as notified by the appropriate government to lay down the curriculum and the evaluation procedure under sub-section (1), taking into consideration:

• the values enshrined in the Constitution;

• all-round development of the child;

• building up child's knowledge, potentiality, and talent;

• development of physical and mental abilities to the fullest extent;

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FAST FORWARD FOR EDUCATION
Holistic, Integrated, Enjoyable Learning with
New Education Policy 2020

Shorter curriculum to enhance essential learning and critical thinking with holistic, inquiry-based, discovery-based, discussion-based, and analysis-based learning

- learning through activities, discovery, and exploration in a child-friendly and child-specific manner;

- medium of instruction shall, as far as practicable, be in child's mother-tongue;

- making the child free of fear, trauma, and anxiety and helping to express views freely;

- comprehensive and continuous evaluation of child's understanding of knowledge and the ability to apply the same.

The overarching 2030 Agenda for Sustainable Development Goals for Education (SDG 4) also commits to provide inclusive and equitable quality education at all levels. It aims at ensuring access to and completion of quality education for all children. This necessitates that at a minimum, all learners develop Foundational Literacy and Numeracy (FLN) skills as building blocks for further learning as well as higher order skills in order to lead to relevant, equitable, and effective learning outcomes at all levels and all settings.

However, the challenges remain in the provision of quality of education for all. Some of the major challenges are persistent gaps in learning outcomes, including lack of clear definition and lack of understanding of the same among teachers and parents, children being unprepared for schooling, teachers lacking the skills and motivation to be effective, time spent on different activities in classroom transactions, and ineffective school leadership. Also, there is a need to orient the entire education system towards achievement of learning outcomes.

With the arrival of the National Education Policy (NEP) 2020, the paradigm shift in the teaching-learning process from the traditional teacher-centred to learner-centric approach, envisions to ensure the holistic development of students by accentuating their creative potential. The policy stresses on the core principles that education must develop not only the cognitive skills– both 'foundational skills' of literacy and numeracy, and 'higher-order' skills such as critical thinking and problem solving, but also social and emotional skills– also referred to as 'soft skills', including cultural awareness and empathy, perseverance and grit, teamwork, leadership, communication, etc. The new policy proposes revamping of all aspects of the education structure, its regulation and governance, to create a new system that is aligned with the aspirational goals of 21st century, while remaining consistent with India's traditions and value systems.

The major recommendations of National Education Policy 2020 for enhancing quality of school education are:

1. Transforming Curricular & Pedagogical Structure– It recommends a new pedagogical and curricular structure of school education (5+3+3+4)– Foundational stage (5 years upto class II) multilevel, play/activity-based learning; Preparatory Stage (3 years from class 3 to 5) having play, discovery, activity-based, and interactive classroom learning; Middle Stage (3 years from class 6 to 8) offering experiential learning in sciences, mathematics, arts, and social sciences, and Secondary Stage offering 4 years of multidisciplinary study, critical thinking, flexibility, and choice of subjects.

2. Integration of Experiential Learning, Play-based, Sports-integrated, art-integrated, storytelling, toy-based pedagogies at all the stages of school education.

3. Integration of Pre-vocational education into the curriculum from upper primary level onwards.

4. Strengthening and universalisation of Early Childhood Care and Education (ECCE), and Foundational Literacy and Numeracy (FLN).

5. Development of National and State Curriculum Frameworks for– ECCE, School Education, Teacher Education, and Adult Education, which will integrate key 21st century skills, mathematical thinking, and scientific temper. There will also be a reduction in curriculum content to enhance essential learning and critical thinking, competency based education, experiential and joyful

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learning, increased flexibility, and choice of subjects particularly in secondary school– including physical education, arts and crafts, and vocational skills.

6. Reform in Assessment and Examination– Creating Holistic Progress Card.

7. Enhancing quality of pre-service and in-service training of teachers.

8. Tracking Student Progress for Achieving Learning Outcomes.

9. National Professional Standards for Teachers (NPST) and National Mission for Mentoring (NMM) for teachers.

Enhancing Quality of School Education

The Samagra Shiksha Scheme was launched in 2018-19 as an overarching centrally sponsored scheme for school education that sees learning as a continuum from pre-primary to higher secondary with focus on contextual, experiential, and holistic learning. It subsumed the three erstwhile Centrally Sponsored Schemes of SSA, RMSA and Teacher Education. It has been formulated in accordance with the Sustainable Development Goal for Education (SDG-4) and in 2021-22, it has been aligned with recommendations of NEP 2020 to ensure inclusive and equitable quality education. The Scheme covers nearly 1.16 million schools, 156 million students and 5.7 million teachers of government and aided schools. This will help in bringing coherence in the system, enhancing collaboration with different agencies, removing duplication of work at different levels, provision of good teaching-learning material, capacity building of teachers

There will also be a reduction in curriculum content to enhance essential learning and critical thinking, competency based education, experiential and joyful learning, increased flexibility, and choice of subjects particularly in secondary school– including physical education, arts and crafts, and vocational skills.

through convergence among different stages of school education, and teacher education.

The major objectives of the Samagra Shiksha Scheme are:

• Support States and UTs in implementing the recommendations of NEP 2020 and RTE Act, 2009;

• Focus on ECCE and FLN;

• Thrust on Holistic, Integrated, Inclusive, and activity-based Curriculum and Pedagogy to impart 21st century skills to students;

• Provision of quality education and enhancing learning outcomes of students;

• Bridging Social and Gender Gaps; ensuring equity and inclusion at all levels of school education;

• Strengthening and upgradation of State Councils for Educational Research and Training (SCERTs), and State/District Institutes of Education and Training (DIET) as nodal agency for teacher training;

• Ensuring safe, secure, and conducive learning environment and minimum standards in schooling provisions.

The Scheme focuses on improvement in quality of education by providing support for different interventions to all States and UTs, like in-service training of teachers and school heads, conduct of achievement surveys at State and National level, composite school grant to every school for providing a conducive learning environment including sanitation and hygiene, grants for library, sports and physical activities, support for Rashtriya Avishkar Abhiyan (RAA) (to connect school-based knowledge to life outside the school, and making learning of Science and Mathematics a joyful and meaningful activity), ICT and digital initiatives, School Leadership development, Learning enhancement programmes, Padhe Bharat Badhe Bharat, etc.

Further, to improve the quality of education in the country, the Government has taken several steps,

• The Central RTE Rules 2010, were amended on 20 February, 2017 to include reference on class-wise, subject-wise learning outcomes at the elementary level. Accordingly, the learning outcomes for all subjects from grade 1 to 8 have been framed by NCERT and notified. This will help all stakeholders to understand what is expected of them and hence enhance measurement and accountability in schooling. Subsequently, learning outcomes for Secondary level have been notified and those at senior secondary level for various subjects are under finalisation.

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NATIONAL EDUCATION POLICY 2020
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SAMAGRA SHIKSHA

Mitigating the learning gaps for Out of School Children

- Bridge course for mainstreaming of out of school children developed by NCERT
- Targeted at the Out of School Children (OOSC) from 6 to 14 years, studying in special training centers
- To bring them back into the mainstream (regular schools)
- Prevent students from dropping out
- To help in a smooth transition from primary to upper primary level

- The National Achievement Survey (NAS) is conducted periodically to enable a health check on the education system, identify gaps in learning outcomes, and take remedial steps. NAS is a sample-based survey conducted by NCERT or any other external agency for classes 3, 5, 8, and 10 with a district level sampling for all categories of schools.

- A comprehensive 70 indicator-based matrix called Performance Grading Index (PGI) has been developed to grade the States/UTs, against certain common benchmarks and provide them a roadmap for making improvements. This has helped instill the concept of competition among States on status of school education.

- **Focus on teachers' training and capacity building**: National Initiative for School Heads' and Teachers' Holistic Advancement (NISHTHA) is a first of its kind teacher training programme under Samagra Shiksha wherein the Government of India, through its academic bodies, NCERT and NIEPA, is taking a lead role in changing the landscape of in-service teacher training.

- **National Initiative for Proficiency in Reading with Understanding and Numeracy (NIPUN Bharat)** has been launched on 5 July 2021, for ensuring that every child in the country attains Foundational Literacy and Numeracy (FLN) at Grade 3 by 2026-27. It has codified learning outcomes at the foundational level (age 3-9 years) under three major Development Goals (DG) and lays down

> National Initiative for School heads' and Teachers' Holistic Advancement (NISHTHA) is a first of its kind teacher training programme under Samagra Shiksha wherein the Government of India, through its academic bodies, NCERT and NIEPA, is taking a lead role in changing the landscape of in-service teacher training.

targets or Lakshyas for each level from Balvatika to Grade 3, so that children maintain good health and well-being, become effective communicators and involved learners, and connect with their immediate environment.

- **Digital Initiatives:** Given the importance of leveraging technology for enhancing teaching-learning experiences as envisaged in NEP 2020, the Government accords high priority to provision of ICT labs and smart classrooms in schools at the upper primary to senior secondary level, which are supported under Samagra Shiksha. Smart classrooms and ICT labs have also been set up in the Kendriya Vidyalayas and Navodaya Vidyalayas.

- **PM eVidya**: It is a comprehensive initiative under Atmanirbhar Bharat Programme, which unifies all efforts related to digital/online/on-air education to enable coherent multi-mode access to education. It includes access to a variety of e-resources in 33 languages including Indian Sign Language over DIKSHA (One nation; One digital platform), Swayam Prabha DTH TV channels (One Class; one channel for class 1 to 12), Extensive use of Radio, Community radio, and Podcast- ShikshaVani.

- **PM Poshan Shakti Nirman** is a right-based Centrally Sponsored Scheme under National Food Security Act, 2013 and covers all children of Balvatika to Class VIII in Government and Government-Aided schools for provision of supplementary nutrition at school.

- NCERT has prepared 'Alternative Academic Calendar' and 'Students' Learning Enhancement Guidelines' to suggest models for the different scenarios of access to digital devices to ensure that no child is deprived of education. These comprise of engaging weekly activities that can be conducted at home, leading to achievement of desired learning outcomes.

- **Home-based learning** is an alternative method in times of pandemic when schools remain closed. Parent and community participation can go a long way in helping children overcome the challenges they face and providing a safe and conducive environment and support for learning.

- NEP 2020 recommends the development of 3-month play-based 'school preparation module' for all Grade 1 Students' with and without preschool education, to ensure that all children are grade I ready till universal provisioning of quality preschool education is achieved. Accordingly, NCERT has developed the VIDYA

PRAVESH module that can be adapted or adopted by States and UTs as per their need.

- **SAFAL (Structured Assessment for Analysing Learning levels):** This Competency-based assessment will be introduced in CBSE schools for grades 3, 5, and 8 as per NEP 2020, from 2021-22 academic session. It will focus on testing for core concepts, application-based questions, and higher order thinking skills. This will benefit over 50 lakh students of nearly 24,000 CBSE schools and the States/UTs who adapt/adopt this framework.

- **Vidyanjali 2.0:** A volunteer management programme; it will help the community/volunteers to interact and connect directly with the Government and Government-aided schools of their choice and share their knowledge and skills and/or contribute in the form of assets/material/equipment to meet the requirement of these schools.

- **School Quality Assessment and Accreditation (SQAA):** CBSE has been designated as Standards Setting Authority (SSA) for Kendriya Vidyalayas, Navodaya Vidyalayas, Private Independent Schools, and Government schools affiliated to the Board. Accordingly, CBSE has prepared standards in different areas of school functioning like curriculum, pedagogy, assessment, infrastructure, inclusive practices, human resources, management and governance, and leadership.

Planning for quality therefore needs to reflect on the following aspects and accordingly, decisions need to be taken as to which aspects need more attention:

- **Curricular Material**- The quality dimension needs to be examined from the point of view of the experience designed for the child in terms of knowledge and skills.

- **Linkages across levels of school education**- Linkages between foundational, preparatory, middle and secondary levels in the processes of designing and preparing curricular material are vital.

- **Synergy**- Setting up of structures that enable school teachers and subject experts drawn from institutions of higher learning to work together for revision of curriculum and development of learning material.

- **Innovative pedagogy**- Every teacher needs to be given autonomy to choose the pedagogy relevant to her learners' needs to make education more experiential, holistic, integrated, inquiry-driven, discovery-oriented, learner-centred, discussion-based, flexible

> *NEP 2020 recommends the development of 3-month play-based 'school preparation module' for all Grade 1 Students' with and without preschool education, to ensure that all children are grade I ready till universal provisioning of quality preschool education is achieved.*

and, of course, enjoyable. Moreover, learning outcomes need to be seen as an integral part of pedagogy.

- **Assessment**- Assessment is vital to track children's progress in a continuous and comprehensive manner using multiple techniques. The shift is towards Competency based learning i.e. children advance to the next level only upon mastering the current level of learning outcomes defined for each grade.

- **Capacity Building and Teacher Training**- Creating a resource pool to address different aspects of quality and disseminating its perspective and mentoring of teachers is vital. NEP recommends that teachers be given continuous opportunities for self-improvement and to learn the latest innovations and advances in their profession. Similarly, school Principals and school complex leaders need similar opportunities for Continuous Professional Development.

Careful consideration of above elements before planning school activities will help in creating a quality classroom, as an interactive place buzzing with activity that facilitates quality learning. It is a place where children learn spontaneously and confidently without inhibition and construct their own knowledge. The increased use of technology has brought about paradigm shift in how teachers teach and how children learn with each learner moving at her own pace. Learning is delivered via a variety of channels: classroom instruction, online courses, videos, assignments, group projects, etc. Classrooms should also become a centre for cultivating resilience in children, helping them emerge from challenging experiences with a positive sense of themselves and their futures. Children who develop resilience are better able to face disappointment, learn from failure, cope with loss, and adapt to changes, be it the pandemic, global warming, climate change, natural disaster, or technology boom. For ensuring quality in classrooms, what is needed is a multi-pronged approach. The various dimensions mentioned are not mutually exclusive; rather they are intertwined, and are completing and complementing one another.

Conclusion

The increased focus on improving overall quality of education by introducing new policy reforms like encouraging multilingualism, research, innovation, curriculum reforms technology-enabled teaching, innovative pedagogy, and providing prevocational skills depict the Government's commitment towards transformation of school education, bridging the learning gaps, and providing education to the last child in the last mile. ❑

Equitable and Inclusive Education

Dr Anupam Ahuja
Zoya Chadha

For any accessible reading material, it is important that the content to be adapted is also inclusive. This means that the material must show diverse characters, and they must be relevant for children from different backgrounds. When developing any teaching-learning material, we must think of all children, with variations in their ability, socio-economic backgrounds, interests, strengths, and access as being able to use it and find it relevant. The attention and focus given by NEP on inclusion and equity in education is built on years of efforts and advocacy by State and national initiatives, and several other stakeholders in their respective capacities to build a better schooling system where children with disabilities can learn together with all children in an equitable manner.

I n a grade four classroom, the teacher asks the students to choose a picture book from the small class library and read it together with a partner. The students pair up with their desk partners, choose a book together, and begin reading. Rashi and her desk partner Priya comment on every page as they finish it- sometimes they giggle, sometimes they say, *"Wow! What will happen next?"* and sometimes they say, *"That has happened with me too."* Across the classroom, Sumit and his partner Feroza are also reading together and asking each other questions like *"What does this word mean?"* and *"How old do you think these characters are?"*. The teacher takes rounds of the room, gives feedback and praises each student. After everyone finishes their book, they discuss it with their partner.

In the above situation, all the children in a class, read, enjoyed, and thought about the book together with others. In fact, Priya and Sumit are students with visual impairments- Priya has low vision, and Sumit has blindness. How did they read the same book together, that too with engagement and interest?

The students in the classroom were reading supplementary books from a series called *Barkhaa: A Reading Series for 'All'*, which is developed with tactile and high-resolution visuals, text in Devanagari, and braille in the same page, and more inclusive features. With these books, all children - those with and without disabilities - can read together and engage with the same reading material. This exemplary material was developed by the Department of Education of Groups with Special Needs (DEGSN) at NCERT, as a Ministry of Education (formerly the Ministry of Human Resource Development) approved project. It provides a direction for developing similarly accessible material in the form of textbooks and other learning resources for all school stages.

Students at an inclusive school during the tryout of the material in November 2019.

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Equity & Inclusion through E-content for Children with Special Needs (CwSN)

- Developing special e-content for visually & hearing impaired students
- Use of radio, community radio & podcasts and uploading of QR coded energised digital textbook for grade 1 to 12 on DIKSHA portal
- Sign language videos for learners with hearing disability
- Videos in Indian Sign Language(ISL) made available on DIKSHA portal

Encourages Inclusive Education

The National Education Policy 2020 makes available the provisions for exemplars like *Barkhaa: A Reading Series for 'All'* and other accessible material, which have not been used widely so far, to reach classrooms and transform the way in which all students learn. This support in the nationwide policy document is essential so that initiatives in inclusion and equitable education do not remain limited in use and scope, and so that there can be systemic support for the development of accessible and language-appropriate teaching-learning material, assistive devices and technology-based tools, inclusion funds, teacher training, resource centres, and more so that schools are equipped to include children with disabilities. Taking all these needs of the education system into account, NEP 2020 has clarified a move to prioritise "the inclusion and equal participation of children with disabilities in ECCE and the schooling system. . . Children with disabilities will be enabled to fully participate in the regular schooling process from the Foundational Stage to higher education."[1]. NEP is also affirming a commitment to actualising the provisions of RPwD Act, 2016 on adapting the schooling system to the needs of children with disabilities so that children with and without disabilities learn together, and also the SDG 4 - To ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

The attention and focus given by NEP on inclusion and equity in education is built on years of efforts and advocacy by State and national initiatives, and several other stakeholders in their respective capacities to build a better schooling system where children with disabilities can learn together with all children in an equitable manner. While the needs and necessary shifts listed in NEP are essential, this by no means is the first time that the inclusion of children with disabilities has been prioritised by educators across the country and efforts are being undertaken to transform the same. In this article we will discuss some of these projects as undertaken by the NCERT - projects which have learnt from and been built on each other as well as on the National Curriculum Framework (NCF 2005). What NEP will hopefully achieve is the bringing together of initiatives under the umbrella of systemic support and therefore strengthen how inclusion and equity is planned, executed, and monitored.

Accessibility in the Current NCERT Curriculum

Due to how central textbooks are in the education of all children from a young age, it is imperative that textbooks espouse ideas that are inclusive, that are representative of people and stories of diverse backgrounds and abilities, and that do not perpetuate discriminatory attitudes or stereotypes.

In the current NCERT textbooks developed post the NCF 2005, inclusion has been ensured in the content of various chapters and subjects across school grades, rather than being limited to one chapter or subject. Inclusion is covered in various forms in the textbooks— in chapters, poems, notes for teachers, and evaluation questions. In the primary classes, this is done through the activities which involve all children through the use of concrete objects along with stories and class engagement activities. In the higher classes, there are sections in the psychology textbooks which discuss disability in a detailed manner. When it comes to accessing NCERT textbooks, efforts have been made via print and digital initiatives. On the ePathshala portal, e-versions are freely available for all textbooks from grades 1-12. The ePathshala mobile app allows for Text To Speech (TTS) which makes the content accessible to persons with disabilities related to low vision. Further, there are diagrams in both braille and text for Economics, and educational learning kits for Mathematics, Science, and Languages at upper primary, secondary and senior secondary levels which include 3-D shapes, paper cut-outs, geo-boards, abacus, etc., which due to their tactile nature promote learning environments for all children, including those with disabilities in a regular classroom.

> NEP 2020 has clarified a move to prioritise "the inclusion and equal participation of children with disabilities in ECCE and the schooling system. . . Children with disabilities will be enabled to fully participate in the regular schooling process from the Foundational Stage to higher education."

These developments in the NCERT textbook provide the impetus for more projects that focus on creative inclusive learning environments in the following years.

Barkhaa: Reading for 'All' Children

The Barkhaa Reading series was developed originally by the Department of Elementary Education (DEE) at the NCERT, and consisted of 40 slim storybooks in Hindi that featured a range of diverse young children in a variety of relatable yet interesting situations. These books are predominantly visual, graded into four levels, and cover a number of different themes which make adaptation into tactile material more complex. The Barkhaa series is hugely popular with children, and in 2017 it was adapted by the DEGSN at NCERT into *Barkhaa: A Reading Series for 'All'*. The goal of this adaptation was to promote inclusion with the belief that all children should be given an opportunity to read the same book in their early years.

The adaptation of Barkhaa to *Barkhaa: A Reading Series for 'All'* is an attempt to provide reading material in both print and digital versions with additional accessible features. In the print version, there is braille and text on the same page, along with tactile and high-resolution images, page gradation, and other features that make the stories of Barkhaa accessible to children with various disabilities and create a better reading

The ePathshala mobile app allows for Text To Speech (TTS) which makes the content accessible to persons with disabilities related to low vision. Further, there are diagrams in both braille and text for Economics, and educational learning kits for Mathematics, Science, and Languages at upper primary, secondary and senior secondary levels which include 3-D shapes, paper cut-outs, geo-boards, abacus, etc.

experience for all the children. Arrows indicate how to move to the next page, and green and red dots denote where a sentence begins and ends. In both print and digital, difficult words and their meanings are explained in different ways suitable to the medium of reading.

The features give a multi-sensory experience to readers - auditory and visual. They create reading environments where children with disabilities can read together with their classmates, parents, and teachers. For instance, before each story begins in the digital version, there is an audio-video introduction in Hindi and in sign language. This helps prepare the child to begin imagining and thinking about the story. In a simple way, it activates interest in a child by asking them questions about their own lives and connecting their experiences with the story. The material also introduces young children to sign language and braille, hence creating a foundation to nurture inclusive attitudes in the early years.

Over the years, the digital version of *Barkhaa: A Reading Series for 'All'* has been widely used and received an overwhelmingly positive response for its pedagogically effective features and user-friendly interface. It is accessible on smartphones, tablets, laptops, desktops, and with features such as changing the background and font colours to suit vision needs, it sets the stage for reading for many children with and without disabilities. The print version of this series remains an exemplar, and has not been yet circulated widely despite an excellent national and international response. With the support of the provisions in NEP, it may be possible to see a time when this series and many others like it are developed and shared widely, so that each school library is equipped with accessible reading material.

It is important too that the accommodations and features developed in and through this series do not remain limited to it, rather they must affect the ways in which teaching-learning material is conceptualised, developed, and used in a widespread manner. Whereas *Barkhaa* was originally a supplementary reading series, in 2019, the experience gleaned from it was carried into an NCERT initiative that worked with textbooks themselves.

Accessible Textbooks for 'All'

NCERT's module 'Towards Accessible Textbooks for All' in collaboration with the National Institute of Special Education, the Republic of Korea, took forward
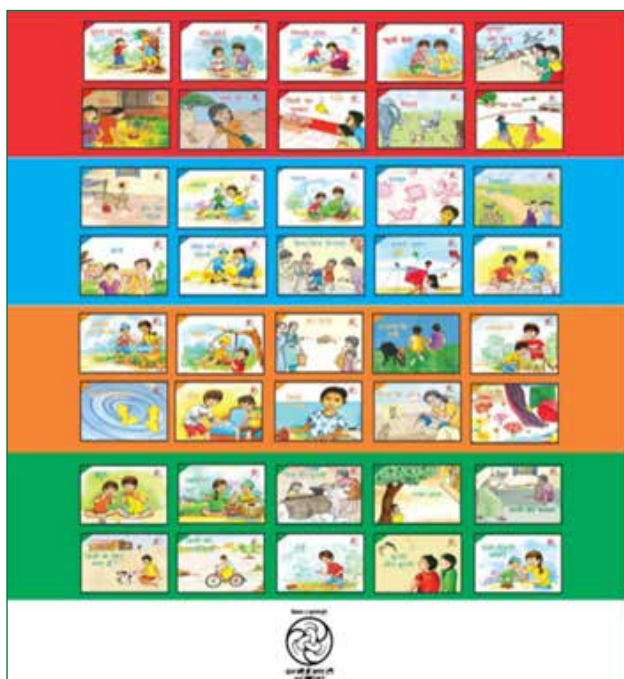
A screenshot of the video with subtitles, illustrations, and an expressive teacher using sign languages

the learning from the Barkhaa series to adapt nine stories and poems from NCERT textbooks of Class 1 to 5 into accessible digital formats (different types of audio tracks, videos which included sign language).

Whereas *Barkhaa* adapted supplementary reading material for the early years, in this module NCERT moved onto textbook chapters from the primary stages. The nine poems and stories for adaptation were chosen from Hindi, English, and EVS NCERT textbooks of classes 1 to 5. Each adaptation is prefaced by an introductory question like in *Barkhaa*, and further there are reflective and subjective questions at the end of each adaptation so that readers continue to think about the story or poem after it is over.

For any accessible reading material, it is important that the content to be adapted is also inclusive. This means that the material must show diverse characters, and they must be relevant for children from different backgrounds. When developing any teaching-learning material, we must think of *all* children, with variations in ability, socio-economic backgrounds, interests, strengths, and access as being able to use it and find it relevant. With the increased reliance on online education since 2020, this becomes all the more important when thinking about digital material or e-content.

E-Content for Accessibility

All the initiatives in accessibility by NCERT that we have discussed so far include at least a digital component, if not more. The e-content guidelines by NCERT were in the works before the Covid-19 pandemic, building on the Universal Design for Learning (UDL)-based exemplar materials already developed and the ways in which e-learning could be made more accessible for all, particularly children with disabilities.

The pandemic in early 2020 meant sudden school closure and heightened inequity, which affected all

students but particularly those who were already vulnerable when it came to accessing education. With an attempt to shift to online education, the losses have been immense. Children with disabilities who require hands-on support and guidance from regular teachers and special educators were also left at risk of losing out on their education. With online education, came a surge in the number of e-learning platforms and digital content. However, this did not necessarily mean that all platforms and content were inclusive or accessible to students from diverse backgrounds and abilities.

The *Guidelines for the Development of e-content for Children with Disabilities* thus proved a timely intervention. They aim to promote the development of high-quality accessible content for children with disabilities and strengthen momentum for inclusive classrooms as envisioned in NEP 2020. They are framed on the basis of four cardinal principles, namely, that the e-content must be **perceivable-** students must be able to perceive content via any sense, **operable-** students must be able to manipulate and control the content, **understandable-** students should be able to comprehend the content and the operations such as the instructions, and **robust,** which means that students should be able to access the content on a range of devices— a laptop, a desktop, a tablet, or a smartphone.

The *Guidelines* lay out standards and guidelines for three components of e-content— namely pedagogy, technology, and content. They emphasise that e-content developed must be user-friendly and tested to see how children from diverse backgrounds and abilities respond to it.

NCERT Handbooks for Teachers

Over the years, NCERT has also undertaken numerous interactions and consultations with various stakeholders and published several handbooks that tackle the 'how' of practising inclusion in schools, for e.g., *Including Children with Special Needs: Primary*

Components of the UDL-based module "Towards Accessible Textbooks for 'All'"
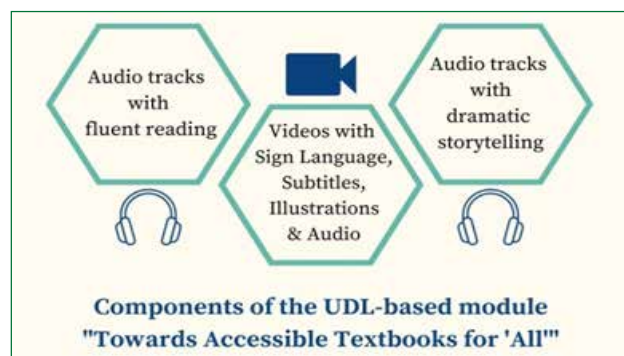
Stage (2014) and *Including Children with Special Needs: Upper Primary Stage* (2015) emphasise the need to shift to classrooms accommodating the needs of all learners. Other handbooks that have become valuable resources since their publication cover specific subjects such as including children with Autism Spectrum Disorder, and the education of children from minority backgrounds. The *Educational Rights of Children with Special Needs: Frequently Asked Questions* (2020) handbook demystifies the Right to Education Act for teachers and parents, and has also been an important intervention in ensuring that the provisions of the Act reach those who need it.

These publications, along with the initiatives discussed further above, form a series of important resources in the field of Inclusive Education. The ever-present question, 'How can students from various backgrounds and abilities learn in the same classroom?' is broken down and addressed via these various initiatives.

Moving Forward

Inclusion in education is a process- it will not take place overnight with NEP 2020, nor with any single project or publication. But all of these are critical landmarks on our path towards building a society which is inclusive and just for all children.

There are thousands and thousands of Priyas and

Sumits in the country. It is not their responsibility, nor the responsibility of any child with a disability to navigate the education system which has historically failed and excluded them. Nor is it the responsibility of parents or the community, even though we have much to learn from them and we must forge meaningful collaborations with them. It is our responsibility— teachers and educators, Policy makers, administrators, and governments to come together and always keep the child as our priority in whatever we do. In doing this, we can hope to make our schools places where all children, regardless of disability, can learn together in a community. And when the schools are provided support to teach children with disabilities, all children, including those without disabilities, learn better.

As the late Bell Hooks, the celebrated professor and feminist said, "I celebrate teaching that enables transgressions— a movement against and beyond boundaries. It is that movement which makes education the practice of freedom." It is only when all students have the right to move beyond the boundaries set for them by an inequitable world, that we will create a society where freedom abounds. ❑

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1.   NEP 2020, 6.10.
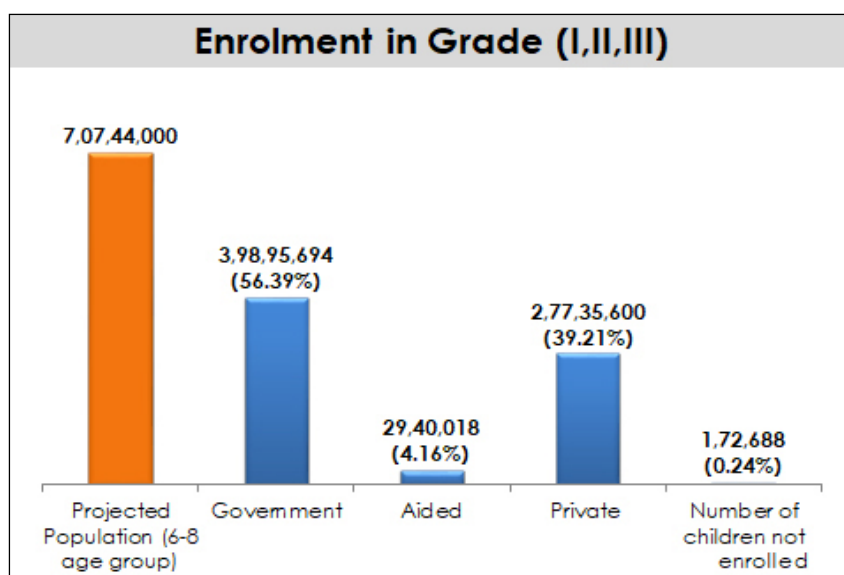
NIPUN Bharat Mission

Rashi Sharma

The renewed focus on foundational learning in recent years is the most positive phenomenon in the education sector. It is now scientifically proven that the brain develops faster in first six years and quality early-childhood care and education can actually bring transformation in education. It is important to provide children the exposure to flexible, multi-faceted, multi-level, play-based, activity-based, and inquiry-based learning. Ensuring that children learn to read early and well is the most important way of ensuring that every child has an equal opportunity to learn at the primary stage of schooling.

Various researches have clearly pointed out that foundational learning forms the cornerstone to successful academic development in later grades[1] and is considered to be the gateway to learning[2]. Moreover, there are several associated long-term benefits from investing in foundational learning, such as better life outcomes[3] and higher economic growth.

6-9 years age group
Projected Population: 7,07,44,000
Number of children enrolled in Govt. schools: 3,98,95,694 (56.39%)
Number of children enrolled in Govt. Aided schools: 29,40,018 (4.16%)
Number of children enrolled in private unaided schools: 2,77,35,600 (39.21%)
Number of children not enrolled in the any of the above: 1,72,688 (0.24%)

India has a gigantic number of Anganwadi centres and almost 3.46 crore children of age group of 3 to 6 are enrolled in 13.87 lakh Anganwadis. As per UDISE 2019-20, there are 15 lakh schools including all categories (govt., govt. aided, and private unaided) with total enrolment of 25 crore children. Further, India has progressed substantially towards achieving universalisation of elementary education; the gross enrolment ratio (GER) at the primary level is 102.7% (as per UDISE + 2019-20) which indicates that nearly all children at primary level are enrolled in schools. The details of children studying in grade I to III are detailed in Graph 1.

Enrolment in Grade (I,II,III)

7,07,44,000 — Projected Population (6-8 age group)
3,98,95,694 (56.39%) — Government
29,40,018 (4.16%) — Aided
2,77,35,600 (39.21%) — Private
1,72,688 (0.24%) — Number of children not enrolled
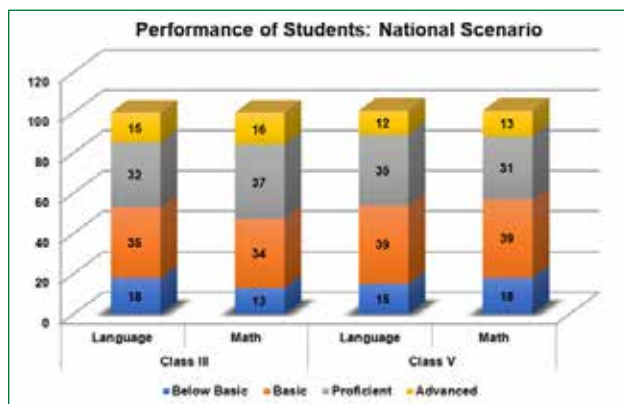
Graph 1

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However, the status of foundational learning is not much different in India; learning levels have remained consistently low. As per the results of National Achievements survey conducted in 2017, almost 18% and 13 % children in language and numeracy in Class III are below basic level, and 15% and 18% children in language and numeracy in Class V are below basic level. Only 47% and 53% children in class III and 47% and 44% children in Class V have achieved proficiency in language and numeracy respectively. This situation requires urgent and focused attention to ensure that the students are able to achieve desired learning competencies at each grade.

NEP 2020 and NIPUN Bharat Mission

The National Education Policy 2020 (NEP 2020) recommended a paradigm shift in the current education system. NEP 2020 not only takes cognizance of unique potential of each learner but also advocates scientific approach while propagating the new curriculum and pedagogical structure divided in four stages, i.e 5+3+3+4 (Foundational, Preparatory, Middle and Secondary). With the revolutionary recommendations such as low stake board exams, thrust on formative assessments, experiential learning at all stages, innovative and activity-based pedagogies to promote critical thinking, creativity and curiosity amongst the children, and establishing crucial role of foundational learning, the Policy envisions to transform the education system and make it compatible with the aspirations of the 21st century. One of the major recommendations of NEP 2020 is emphasis on universal acquisition of foundational skills by all children at the end of Grade III. Foundational learning accounts for children's ability to read and meaningfully comprehend, as well as use basic mathematical operations in real life. The policy clearly states that until we take urgent steps for improving foundational learning, the whole policy will become irrelevant.

> The vision of the NIPUN Bharat Mission is to create an enabling environment to ensure universal acquisition of Foundational Literacy and Numeracy (FLN), so that every child achieves the desired learning competencies in reading, writing, and numeracy at the end of Grade III in next five years.

In order to address above challenges and achieve the goal of attaining foundational literacy as envisaged by NEP, Department of School Education and Literacy has launched a National mission namely 'NIPUN Bharat' (National Initiative for Proficiency in Reading with Understanding and Numeracy)[4] on 5 July, 2021. The vision of the NIPUN Bharat Mission is to create an enabling environment to ensure universal acquisition of Foundational Literacy and Numeracy (FLN), so that every child achieves the desired learning competencies in reading, writing, and numeracy at the end of Grade III in next five years. The mission will cover the learning needs of children in the age group of 3 to 9 years. There will be a strong linkage and smooth transition between pre-school stage and Grade I, National Curriculum framework for ECCE being developed by NCERT will be followed by both Anganwadis and Pre-primary schools to ensure smooth transition to Grade I. The NIPUN Bharat Mission will be executed across the nation through a five-tier implementation mechanism including National-State-District-Block-School level. Play and Activity based learning, comprising of alphabets, languages, numbers, counting, colours, shapes, indoor and outdoor play, puzzles and logical thinking, problem-solving, drawing, painting and other visual art, craft, drama, puppetry, music, and movement are going to be integral part of innovative pedagogies being adopted for NIPUN Bharat Mission.

Holistic Development of Learners

NIPUN Bharat Mission has been envisioned to make learning Holistic, Integrated, Inclusive, Enjoyable, and Engaging. The Mission keeps in mind the underlying theme of NEP 2020 and focuses on holistic development of learners. The three developmental goals emphasised by the mission encompasses whole gamut of different domains of development like physical and motor development, socio-emotional development, literacy and numeracy development, cognitive development, spiritual and moral development, art, and aesthetic development which are interrelated and interdependent. These developmental aspects make child competent to deal with complex life situations. All these domains have been subsumed into three following major goals:

• Developmental Goal 1: Children maintain good health and well-being

• Developmental Goal 2: Children become effective communicators

• Developmental Goal 3: Children become involved learners and connect with their immediate environment.
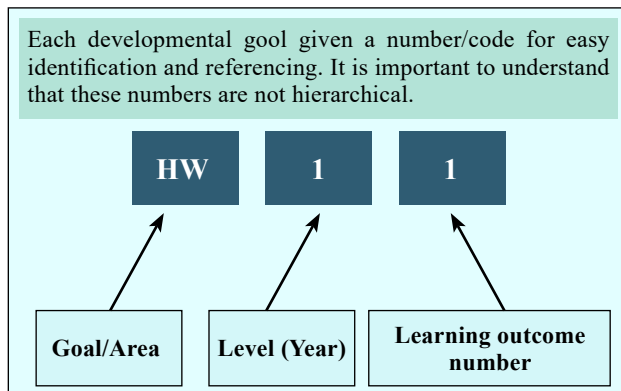

Graph 2

Competency

The Competencies for each developmental goal have been identified. They are generic in nature and can be related to more than one learning outcomes. Competencies specify what children will know, be able to do, or be able to demonstrate when they have completed or participated in a course or programme. In competency-based education, teaching and learning focuses on acquiring these basic competencies which can be measured through Learning Outcomes.

Learning Outcomes (LOs) and its codification

Learning Outcomes are specific and measurable statements that describe exactly what a student will be able to do. In order to achieve the competencies identified, learning outcomes under each goal have also been identified and codified to understand the progression of a child from one grade to another; these are codified from 3 years of preschool to grade III (level 1 to 6).

The cycle of progression of the child while achieving a learning outcome from pre-school 1 to grade III is depicted in Chart I.

Another distinctive feature of the NIPUN Bharat Mission is Lakshya Soochi or Targets for Foundational Literacy and Numeracy which has specifically been developed to generate greater awareness among the parents, community, volunteers, etc. The Lakshyas has been developed from Balvatika to Grade 3 and are based on the learning outcomes developed by the NCERT and international research and ORF studies. For example, a child should be able to read 45 to 60 words per minute and at least 60 words per minute correctly by the end of Grade II and III respectively from an age appropriate unknown text with comprehension and clarity.

Each developmental goal given a number/code for easy identification and referencing. It is important to understand that these numbers are not hierarchical.

HW | **1** | **1**

Goal/Area | Level (Year) | Learning outcome number

Graph 3

VIDYA PRAVESH

In India, access to quality Early Childhood Care and Education (ECCE) is still a goal to be achieved. There are many children who directly enter grade I without having any exposure to pre-school. Therefore, NEP 2020 has recommended a 3-month-activity-based school preparation module so that children become ready for Grade I. In accordance of this recommendation, NCERT has developed Vidya Pravesh, a 3 Months Play Based 'School Preparation Module' as an integral part of the NIPUN Bharat mission that can be adapted or adopted by States and UTs as per their need for children entering Grade I. The objectives of Vidya Pravesh is to provide age and developmentally appropriate early learning experiences to all children coming from diverse settings and to promote strong foundation for development and learning of all children with a focus on FLN. This module will also ensure a smooth transition to class 1 and getting children acquainted with school routine.

Assessment for Learning

NIPUN Bharat mission promotes 21st century skills and replaces rote memorisation with critical thinking, scientific temper, and activity-based learning. It realises that the primary aim of education is that the learner will acquire knowledge, understand what has been acquired and make informed decisions in the application of that knowledge to solve problems. If the learner is unable to make connections between the content and their day to day life, the content loses meaning. Schools should provide an environment where students can develop the ability to see relationships between subjects, content, and skills as well as between school and life outside of the classroom.

Assessment involves the gathering of information from all possible sources, regarding knowledge, skill, attitude, ability, and beliefs of the students, document the same, and use this data to make informed instructional decisions, refine or restructure processes, and ultimately improve the students' learning. At the foundational level, school-based assessment is the most appropriate way of tracking the progress of learning. NIPUN Bharat mission

Chart 1

	Competency	Preschool 1	Preschool 2	Balvatika	Class 1	Class 2	Class 3
		Learning Outcomes					
Goal 1	Demonstrates awareness of Self	**HW1.1** Begins to state some physical characteristics about self	**HW2.1** Describes self in terms of physical characteristics	**HW3.1** Describes self and others in terms of physical characteristics, gender, interests, likes, dislikes	**HW4.1** Recognizes different body parts and uses various body movements	**HW5.1** Maintains correct posture, uses various body movements to participate in games and sports	**HW6.1** Participates in games and sports to strengthen and extend gross motors skills
Goal 2	Demonstrates Phonological awareness- rhyming	**ECL11.4 b** Sings/hums words/lines/parts of songs and rhymes, in own language/L2	**ECL12.4** Identifies few rhyming words	**ECL13.4 b** Enjoys and creates non-sensical rhyming words	**ECL14.4** Creates rhyming words based on the available text	**ECL15.4** Writes selective rhyming words in pair	**ECL16.4 b** Uses rhyming words for writing short sentences
Goal 3	Compares and classifies given objects and pictures	**IL 1.5** Compares two objects based on one observable property, for example-length, weight, or size	**IL 2.5** Compares and classifies objects by two factors like shape and color, size and shape etc. Describes objects using words like big/small, tall/short etc.	**IL 3.5** Compares and classifies objects by three factors like shape, color and size etc. Correctly uses position words (besides, inside, under) to describe objects	**IL 4.5** Compares and classifies objects/pictures based on multiple factors and demonstrates understanding of position	**IL 5.5** Compares and classifies objects/pictures based on multiple factors and describes them using properties	**IL 6.5** Compares and classifies objects/pictures in different categories and describes the properties used for classification

recommends a stress-free, non-threatening, and qualitative observation-based assessment at school level. School-Based Assessment (SBA) is principally aimed to see the individual as well as collective impact of the classroom transactions, and experiences at home in attaining the desired learning outcomes as intended in the curriculum.

The school-based assessment will help in monitoring the quality of education in a decentralised manner. It would be conducted through day-to-day observation and documentation of stated outcomes achieved as well as children's development in terms of their health and nutrition status, their participation and involvement in learning experiences, artwork, games and exercises, music and movement, etc. including their behaviour in classroom and outside. Assessment at this stage is done to recognise and encourage strengths, identifying areas that need additional support, and addressing learning/developmental gaps. In addition to SBA, periodic National Achievement Survey (NAS) will also be conducted to assess the health of the education system.

Stakeholders' Participation

The key factor to make any programme successful and sustainable is dependent on the participation of all stakeholders. NIPUN Bharat Mission cannot succeed without the participation of community including parents and volunteers.

The involvement of parents and community is even more critical to provide extended academic support. Even after entering the formal schooling system, family and community continue to be the places where major learning takes place as children spend more than 80% of their time at home. Additionally, ensuring effective community involvement, especially in early years can make local context, culture, and language an integral part of a child's education that positively influences learning levels. The recent Covid-19 pandemic has also demonstrated the limitations of the formal schooling system and the vitality of the involvement of parents in ensuring continuity of learning process. All the stakeholders are required to be made aware of the targets of NIPUN Bharat and its criticality and impact on future learning path of the child.

Conclusion

The existing 10+2 system has created a notion that class 10th and 12th are most important in terms of academic achievements and children are essentially required to do well in these classes. However, this perception requires to be changed and focus should be shifted to early classes as enough evidences are available which clearly show that if children are unable to attain foundational skills by Grade III, it become very difficult for them to fulfil the expectations of curriculum in higher classes. Grade III is the inflection point where children are expected to 'read to learn' and this is where children who have not made it, essentially get left behind and maintain flat learning trajectories[5]. The time is now ripe for every citizen to understand importance of foundational learning and participate wholeheartedly in the endeavours to make NIPUN Bharat Mission a grand and sustainable success. ❑

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Bridging Education and Communities

Dr M K Sridhar
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Education has been the foundation of Indian society since the beginning of civilisation. Prior to colonisation, the Gurukula system was prevalent and worked on informal structures. This provided a greater scope for interaction with the society and the connect between knowledge and its application. During times of Nalanda and Takshashila, the history of higher education in India was more holistic and connected to the society. The current education system is rooted in the British education system which brought in a formal structure and contributed significantly to the growth of education in India. Universities, colleges, and schools were structured and developed on these lines.

A great amount of emphasis is laid on the importance of education in India. The first two Education policies of the country have aimed at compulsory education for children and achieving uniformity across social groups. They have been successful in establishing regulatory structures, systems, and processes to achieve access, quality, and equity outcomes. With the growth of the education sector, there have also been several challenges. The focus on excellence has made education more knowledge-oriented with lesser importance to the application of knowledge to the society.

Community engagement is an essential element which links education to the society. The interconnectedness can be established only through community extending its ownership to the educational endeavours and educational institutions offering its programmes and services, that in turn empowers the society. In the current structure, community takes ownership by participating through School Development and Monitoring Committees (SDMCs) and Educational institutions work with communities through programmes of NSS, NCC, Red Cross, and other voluntary efforts of institutions.

The flexibility and autonomous dimensions of the National Education Policy 2020 makes community engagement an intrinsic element of education rather than making it a discreet effort. The flexibility element provides for greater opportunities to build community engagement at institutional level and autonomy gives the power to institutions. Institutions with flexibility and autonomy are free to design and develop programmes to bring interconnectedness with the society. All aspects of the 2020 Policy make us realise that social justice and social transformation are at the backdrop and education is a vehicle to attain them. NEP articulates the role of community in education both explicitly and implicitly. Some of those which are explicit include bringing Anganwadis in the education fold; integrating skills at various levels; making education holistic and multidisciplinary; focusing on experiential learning; creating an atmosphere of autonomy; integrating local skills in the main course of education focusing on impactful research; and so on.

Community Engagement in School Education

NEP envisages a public education system with true philanthropic private and community participation. The community is an integral part of School Education and has a major role to play in shaping it. There have been evidences that village schools function effectively only when the local community is active and participates in the functioning of the schools.

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Regarding Early Childhood Care and Education (ECCE), NEP 2020 states that Anganwadis shall be fully integrated complexes/clusters, and children's parents and teachers will be invited to participate in school complex programmes. All these years, Anganwadis have focused on mother and child nutrition, their integration with education enables supporting parents and building communities in providing early childhood education along with the necessary nutrition and health care.

The concept of cluster schools brings in the role of community in building schools and enhancing learning. A school complex groups neighbouring schools into a cluster. Apart from the benefits of pooling and sharing resources like teachers, learning, and physical resources; the biggest benefit would be the communities around the school complex. Broad-based school complexes and clusters enable innovations specific to the location and context. The school cluster management committees consisting of various stakeholders include the community along with local management experts who can take care of the governance and management of school clusters.

Non-governmental philanthropic organisations are encouraged to build and develop schools. Schools with participation of community in the management and development of schools have proved to be more proactive in achieving outcomes. Community participation in school development has a critical role in school improvement across inputs, processes, and outcomes. The Policy recommends the participation of community, alumni, and volunteers in making learning more effective and in achieving Foundational Literacy and Numeracy (FLN) outcomes.

To use the unutilised capacity of school infrastructure and to promote social, intellectual, and volunteer activities for the community, the policy suggests '*Samajik Chetna Kendra*' which could promote social cohesion during non-teaching/schooling hours.

Community Engagement in Higher Education

In higher education, the policy contains several important elements fostering social responsibility and community engagement in Higher Education Institutions (HEIs). In Higher Education, community engagement enables bridging the gap between theoretical concepts and its practice. Education has no meaning unless real-time problems of the society are identified and solutions are provided. This can happen only through deeper interactions between higher education institutions and communities. Education and communities have a symbiotic relationship as education must contribute to society in finding solutions to the real time problems and in turn society has to support the institutions in facilitating curriculum development, teaching learning, and research.

The major recommendation of NEP is to make higher education broad-based and holistic. Universities and colleges have to become multidisciplinary institutions of higher learning, offering undergraduate and graduate programmes, with quality teaching, research, and community engagement. Multidisciplinary approach binds the courses to the needs of the society with flexible and innovative curriculum. The Choice Based Credit System (CBCS) structure calls for varied combination of courses with integration of experiential learning. To make learning broad-based, courses are suggested in the areas concerning community service, environmental education, and value-based education, and projects in the areas of climate change, pollution, waste management, sanitation, conservation of biological diversity, management of biological resources and biodiversity, forest and wildlife conservation, and sustainable development and living. Value-based education includes development of humanistic, ethical, constitutional, and universal human values as also

> All aspects of the 2020 Policy make us realise that social justice and social transformation are at the backdrop and education is a vehicle to attain them. NEP articulates the role of community in education both explicitly and implicitly.

life-skills; lessons in *seva*/service; and participation in community service programmes. Students are to be provided with opportunities for internships with local industry, businesses, artists, crafts persons, etc., as well as research internships with faculty and researchers at their own or other HEIs, so that students actively engage with the practical side of their learning through sports, culture, environment clubs, and community service projects. NEP, in line with the Global Citizenship Education (GCED), recommends empowering learners to become aware of and understand global issues and to become active promoters of more peaceful, tolerant, inclusive, secure, and sustainable societies.

Community participation in school development has a critical role in school improvement across inputs, processes, and outcomes. The policy recommends the participation of community, alumni, and volunteers in making learning more effective and in achieving Foundational Literacy and Numeracy (FLN) outcomes.

Directional Efforts

In its pursuit of implementing the policy, the government and concerned bodies are in the process of developing guidelines for the implementation both at the national level and at respective States. The University Grants Commission (UGC) has also developed the National Curricular Framework and guidelines, 2020 specifically on fostering community engagement in higher educational institutions (HEIs). There are efforts to develop courses and curriculum to engage students with rural communities under the 'Unnat Bharat Abhiyan'. The Ministry has also entrusted Mahatma Gandhi National Council of Rural Education (MGNCRE) with the task of preparing and running Massive Online Open Courses (MOOCs) on SWAYAM platform on "Fostering Social Responsibility and Community Engagement".

Implementing Community Engagement in Institutions

The depth of community engagement depends on the priority that institutions place on involving communities in Governance, Teaching learning, Research, and Institutional Development. The policy has paved way to the Institutions to become an integral part of the society, draw resources, and contribute knowledge to the communities.

The policy gives great clarity on what Schools, Colleges and Universities have to do for better community engagement and why such an engagement is necessary. It is now to the institutions to move forward in the directions laid down by the Policy.

The challenge is how to go ahead with the implementation at individual schools and colleges with its true

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spirit and pro-activeness. Community engagement has to be institutionalised by incorporating the same in the vision, mission, objectives, and the institutional plans. Institutional mechanisms have to be developed to integrate community engagement with other areas of teaching-learning and research. However, institutions are feeling the need to be hand-held during the implementation.

With the available direction and in anticipation of a few guidelines from the Government and governing bodies, the way forward for institutions is to proactively respond and implement community engagement at their level.

Institutions have three options in making community engagement a reality. Firstly, anticipating directions from the government and implementing accordingly. Secondly, taking the spirit of the policies, implementing them with or without anticipating directions from the Government and other concerned bodies by setting teams, preparing plans, involving community stakeholders, and working towards implementation. Lastly, thinking beyond NEP, innovating newer ways of bringing community closer to the institution. It is the Institutions which can build the interconnectedness within the society, in order to achieve this, the institutions have to instill amongst the stakeholders that they belong to the society and bring society closer to the institutions to respond to their needs.

The new policy attempts to address the need of social connect through education. The role of government bodies, institutions, NGOs, and other organisations is crucial in realising these goals and creating an adequate ecosystem and opportunity for individuals to build a connect.

It also focuses on the establishing a logical end to the process of learning which is not just accumulation of knowledge, instead building a robust environment that enables application of concept and understands the practical usage of the same in societal necessities.

The ideology behind NEP is to bridge the divide between the society and education. Education is intended to be part of the society and society needs contribution of educational institutions to have a synergetic relationship. This relationship could be strengthened only when institutions recognise their role and work towards making community engagement a reality. ❑

Recruitment, Training, and Assessment of Teachers

Ranjitsinh Disale

The education system aims to develop good human beings capable of rational thought and action, possessing compassion and empathy, courage and resilience, scientific temper, and creative imagination with sound ethical moorings and values. Its motive is to produce engaging and productive citizens who can contribute to building an equitable, inclusive, and plural society as envisaged by our constitution. There are swift changes taking place in the education sector across the globe.

The new National Education Policy 2020 reflects on how the Indian education system is dynamic. The policy also stresses on the importance of the role of teachers, it states "Teachers truly shape the future of our children - and, therefore, the future of our nation." Teachers who are also called 'Guru', one of the oldest words for teachers in Indian culture tells us how teachers have been the most respected members of our society for ages. Thanks to their noble work of passing on the skills, knowledge, and even ethical values to generation after generation.

However, over time the role of these human resource creators has been looked upon as uninspiring with rampant exploitation. But with the constantly changing world, there is a need for complete overhaul by keeping teachers at the core of the reforms in the education system. And to do so, there is a need for change in recruitment, training, and merit-based assessment of teachers.

Teacher Recruitment Process

For the recruitment in government and private schools, teachers must possess a professional degree and qualify Teacher Eligibility Tests (TET). NEP 2020 recommends strengthening the TET in various ways and inclusion of evaluation of subject knowledge and teaching competencies through demonstrations and interviews. These interviews would also assess comfort and proficiency of teaching in the local language.

Apart from strengthening TET, there are various positive points the NEP highlights about teachers' recruitment. The policy aims to make the teacher recruitment process more transparent by halting mass transfers, using computerised systems for automation of the transfer process, and also encouraging States to have technology-enabled planning and forecasting exercises to determine vacancies by subject.

One of the major challenges is the scarcity of teachers. Usually, it has been an issue particularly in the disciplines of art, physical, and vocational education, as well as among counsellors, and technical staff. The policy promotes the idea of hiring local experts to a school complex and sharing them across the cluster of schools adopted by State or UT governments to deal with inadequate number of teachers.

It is to be noted that there is a hindrance among the teachers for the rural posting for various reasons. However, the policy suggests incentives for teachers to take up teaching jobs in rural areas, by the provision of local housing near or on the school premises, or increased housing allowances. In addition, merit-based scholarships will be provided for rural students and teachers.

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Also, it is laudable that the policy encourages the appointment of local eminent persons or experts as 'master instructors' in various subjects, such as in traditional local arts, vocational crafts, entrepreneurship, agriculture, or any other subject where local expertise exists. This will benefit students and help preserve and promote local knowledge and professions.

Training

Teacher recruitment is not the end but the beginning of the process towards achieving the goal of having the best education system. After recruitment, shaping of teachers' career is also equally essential.

With changes in the global ecosystem and employment landscape, it has become more important for children to know how to learn. For the same, the education must focus on learning critical thinking, creativity, multidisciplinary adaption, innovation, problem-solving among others.

The motive of education should also be to make education more learner-centered, enjoyable, experiential, discovery-oriented. The system must embrace basic arts, humanities, sports, games along with science and maths. The importance of incorporation of languages, literature, culture, and values cannot be forgotten because it will help in the development of all aspects of learners and enhance their capabilities.

The way teachers interact with students in the classroom, and the experiences that teachers provides them, can make all the difference in ensuring students' emotional, academic, and social learning. Therefore, teachers' training becomes more important.

Let's have a look at a cricket team. Apart from 11 players who actually play on the ground, a team has extra players and other members like the main coach, batting coach, bowling coach, mind and physical coach. With their strong support system, players give their best on the ground. What if we apply the same for teachers? If teachers get strong support like a cricket player gets on the ground, then even they can give their best. Therefore, along with teacher training, it is also important that the training process should be continuous.

NEP states "Teachers will be given continuous opportunities for self-improvement and to learn the latest innovations and advances in their professions. These will be offered in multiple modes, including in the form of local, regional, state, national, and international workshops as well as online teacher development modules. Platforms (especially online platforms) will be developed so that teachers may share ideas and best practices. Each

teacher will be expected to participate in at least 50 hours of Continuous Professional Development (CPD) opportunities, driven by their own interests. CPD opportunities will, in particular, systematically cover the latest pedagogies regarding Foundational Literacy and Numeracy (FLN), formative and adaptive assessment of learning outcomes, competency-based learning, and related pedagogies, such as experiential learning, arts-integrated, sports-integrated, and storytelling-based approaches, etc."

Considering the diversity and different socio-economic strata in the society, there is a need for tailored teachers training. The training should be customised/need-based, continuous, practical, and more focused.

- **Tailored Training:** Present day training system is 'fit to all', which means, there is only one training module for all. Our country being a diverse country, training should be according to the needs of the teacher considering different factors like urban, rural, tribal, remote areas where the teacher is teaching. Training should be aligned with the teachers' needs and environment.

- **More practical:** Present day teachers' training is theoretical; for the best results it has to be more practical. To simplify this, let's take an example of the football team. If a football coach teaches how to score goals on paper without making the team practice on the ground, will that suffice? Like we conduct training for students, we can also conduct it for teachers through varied activities. Information about the new curriculum is given through lectures in training sessions. There could be ways to combine it with activities?

There should be need-based training for teachers. Considering what teachers need to do in the classroom, they should be given more opportunities to practice, polish their skills, and receive feedback for improvement.

- **Focused training:** Recently, the training is conducted only when there are changes in the syllabus or something new is introduced to it. These kinds of trainings are generalised trainings. There should be focused training that can be measurable and result-oriented. For example, in teachers training programme for a language course, the trainee can be taught on effective use of technology to deliver the poems. In this way, we can move from generalised to focused training to achieve better results.

- **On-going training:** The teachers' training is considered to be completed once it is imparted. There is a need to change this approach. There should be a follow-up system, where teachers should be asked whether they face

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any difficulties while teaching in the classroom after completing their training. If yes, the system can provide them assistance to overcome those hurdles. Teachers should be given continuous support even after the training. They should be provided feedback based on observations after their training.

Independent Training Wing

For teachers training programme, three to four teachers from each district are selected and trained at the State level. These trainees then work as trainers for teachers from the district level. This continues at tehsil and then at the block level. In this process, students may suffer academically due to loss of classes and disturbed schedule, when their teachers are busy with the training.

To address the same, there could be a separate training wing where interested and additional teachers can be appointed as permanent trainers. These trainers will be given an advanced training which will help in moulding them into competent trainers who can then train others from the district, tehsil to block level. This change can be made at the SCERT training wing available in States and UTs.

We can also check whether this system can be implemented on a PPP basis where private organisations will work as trainers on a voluntary basis. Teachers are not trained to train other teachers. They are just trained to teach students. This thus highlights the need of professionals or the formation of the independent training wing with a skilled and professional training team.With the availability of many courses online on various platforms, teachers can be given choices to attend various programmes available at their time of convenience.

Source: Twitter account of National Council for Teacher Education, MoE, GoI

> The motive of education should also be to make education more learner-centered, enjoyable, experiential, discovery-oriented. The system must embrace basic arts, humanities, sports, games along with science and maths. The importance of incorporation of languages, literature, culture, and values cannot be forgotten.

Merit-based Assessment

After teachers' training, another important aspect that comes in the loop is the assessment of teachers. According to NEP, teachers doing outstanding work must be recognised, appreciated, promoted, and given an increment in the salary. Incentivisation of all teachers to encourage them to do their best is needed. Therefore, a robust merit-based structure of tenure, promotion, and salary structure may be developed.

The policy also hinted at the development of the National Professional Standards for Teachers (NPST). This will be developed by 2022. It is suggested that, the standards would cover expectations of the role of a teacher at different levels of expertise/stage, and the competencies required for that purpose. It will also comprise of standards for performance appraisal, for each stage, that would be carried out on a periodic basis. The NPST will also inform the design of pre-service teacher education programmes. This could be then adopted by States and determine all aspects of teacher career management, including tenure, professional development efforts, salary increment, promotions, and other recognitions. Promotions and salary increment will not occur based on the length of tenure or seniority, but only on the basis of such appraisal. The professional standards will be reviewed and revised in 2030, and thereafter every ten years, on the basis of rigorous empirical analysis of the efficacy of the system.

Evaluating Teachers

Currently, there is a Confidential Report (CR) method used for the evaluation of teachers. This is not a performance and target-based method. This system does not give weightage to evaluation of children's learning ability as a result and outcome of teacher's efforts. There needs to be some method to make it more objective. Teachers' performance should be measurable. The increment should be based on performance and not the tenure like it has been done presently. Because with the present day system, salary increment of teachers is the same, irrespective of their performance. There is a need for a system where increments are given based on the performance. Also there may be a provision of incentives. This will help improve the performance. With these improved performances, desired results can be achieved.

The NEP looks promising as it rightly highlights the changes necessary in the 21st century. With the addition of some more alterations to teachers' training programme and their implementation, the system will achieve greater goals, assist teachers to think out of the box to attain great heights, and support children to realise their potential. ❑

Teach them Young

Shankar Maruwada

At present, there are likely to be about 100 million children between the ages of 3-6 years.[1] These years are the bridge years between home and school, critical for physical, cognitive, socio-emotional, language, and early numeracy development - components together comprising Early Childhood Care and Education (ECCE). These years have the "most important influence in subsequent learning, behaviour and health."[2] The damage ensued by no early learning for the majority of little children of India is no different from the devastation caused by climate change and the pandemic. Despite the setback due to the pandemic, with the trend of children returning back to schools for a brief period before the recent wave, we need to expand the opportunities to the youngest children of India, for the future depends on how our youngest children are empowered to learn and craft their own future in a fast-paced, ever changing world.

The pandemic has further exacerbated the problem for the most vulnerable children. It has become imperative to lay a solid foundation of ECCE since population trends show that India's child population has reached a peak; hereafter we can expect a slow decline.[3] Over the next decade, about 23-24 million births are expected per year.[4] If we do the heavy lifting of educating this one generation, future generations will reap rich dividends.

Foundation for the Future

Consider the year 2040- 25 year old Raksha looks back to 2020 when the pandemic caused destruction in the lives and livelihood of her poor parents. 20 years hence, she walks the same path of uncertainty. Five year old Raksha was uncared for, had not attended any preschool and dropped out of school in class 8. She wondered what could have helped break this 'chain of pain' passed down from generations. She wanted her 3-year-old daughter not to live a life like hers.

For overall development, a child in the early years needs:

- Care, in the form of good health & nutrition and a safe environment, as well as,

- Stimulation that fosters curiosity particularly "planned play, adult-child interactions, child-child interactions, and opportunities for holistic development".[5]

NEP 2020 notes: "Over 85% of a child's cumulative brain development occurs prior to the age of 6, indicating the critical importance of appropriate care and stimulation of the brain in the early years..."[6]
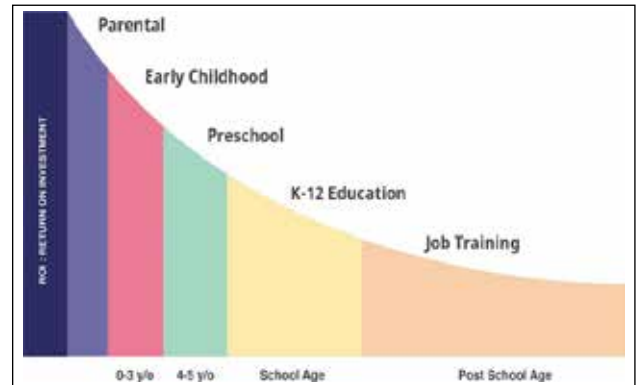
Neuroscience tells us that "a young child's brain develops through stimulation of the sensing pathways

The author is CEO and Co-Founder of EkStep Foundation. Email: shankar@ekstep.org
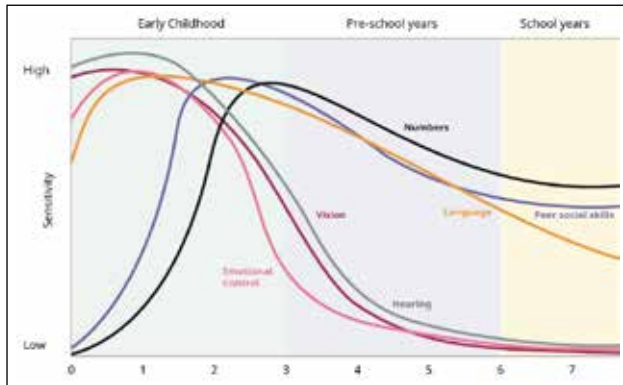
Sensitive Periods for Early Development (MWCD 2013, adapted)

Heckman's Curve: Economic Impact of Early Childhood Learning (Heckman 2021)

(e.g. seeing, hearing, touching, smelling, tasting) from early experiences"[2]. A mother singing a lullaby to her child or a father playing with his child are such critical early experiences. The child's brain in these years is plastic, rapidly growing, and yearning for experiences to prepare itself for the future. Greater the number of experiences, more the neurons create neural pathways for optimal learning and development.

Child and adolescent mental health therapist Dr Shelja Sen states about the brain that:

"...the more it lights up, makes synaptic connections and builds pathways, the more complex and stronger it grows. Especially the pre-frontal cortex or the conductor of the whole neural orchestra, which seats what we call the executive skills– ability to think clearly, self regulate, manage time, organise self, be goal directed. In short– the key ingredients for optimal living."[7]

Therefore, missing this critical window of opportunity would be to deprive the child an opportunity for learning and a better future.

> A mother singing a lullaby to her child or a father playing with his child are such critical early experiences. The child's brain in these years is plastic, rapidly growing, and yearning for experiences to prepare itself for the future. Greater the number of experiences, more the neurons create neural pathways for optimal learning and development.

Nobel Laureate James Heckman strongly argues that investing in early childhood education produces the greatest returns in terms of human capital and ensures quality economic returns. It results in far greater returns than the same investment in schooling[8]. It thus achieves the most impact for those most impacted.

"It takes a village to raise a child."

This adage is befitting of the early year children more than anyone else. They begin to form a sense of self but their agency is mediated by caring adults who surround them–family, teachers, anganwadi workers, etc., who would provide for their food, care, learning, and safety, and shape a sense of self.

They play with their peers in the community. Across these spaces, they learn all the time: "Children learn from anything and everything they see. They learn wherever they are, not just in special learning places"[9]. How can this be optimised for learning, at home and community, during play or interacting with the family?

What is required to empower caring adults to engage in children's early learning? What
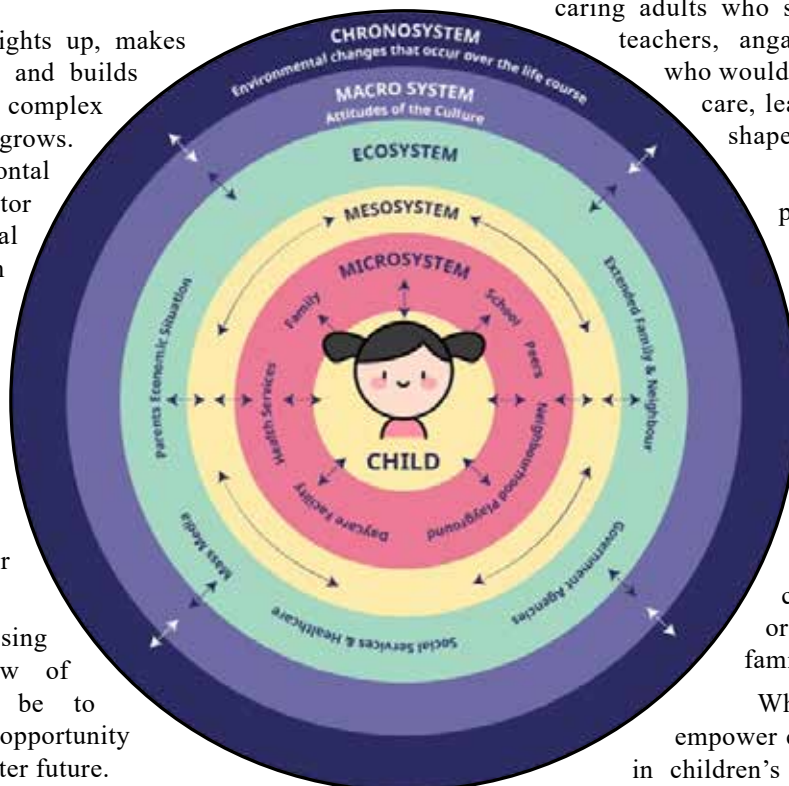
support do these caring adults need?

ECCE in India

Decades of state effort has gone into delivering care and learning for the little child. India has, among other programmes, one of largest network of child care or *anganwadi* centres, set up under the Ministry of Women & Child Development's Integrated Child Development Services (ICDS) Scheme (1975), that provides a range of services, from health and nutrition to pre-school non-formal education.

Civil society organisations have played a significant role- conducting pioneering research, working extensively with States in building capacity for anganwadis and schools, spreading awareness, implementing programmes, and interventions and creating a number of practitioner resources.

In addition, private preschool, and day care services have been accessible at various price points due to increased demand particularly between 2008 and 2020.[10] Despite multiple actors and a variety of interventions and initiatives, achieving quality ECCE still remains a challenge.

Unprepared Schooling

Of the nearly 25 million children born in India every year, about 99% enroll in school at the age of 5 or 6. However, as *ASER 2019: 'Early Years'* reveals, many enter school without being school-ready. Only 10.7% of children aged 5 could match pictures beginning with the same sound, and only 17.5% could complete a simple pictorial pattern.[11]

The root cause for this, as the National Education Policy (NEP) 2020 points out is: "Presently, quality ECCE is not available to crores of young children,

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It proposes that change be brought about through campaigns, events, etc., drawing on key insights from successful public programmes like Polio eradication and Swachh Bharat in order to make ECCE a Jan Andolan or People's movement.

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particularly children from socio-economically disadvantaged backgrounds."[6] A strong investment in ECCE will ensure school-readiness, which is the achievement of preschool level learning outcomes across key developmental goals. These can be: 1. Children maintain good health and wellbeing, 2. Children become effective communicators, 3. Children become involved learners and connect with their immediate environment.[12]

ECCE: a core Policy imperative

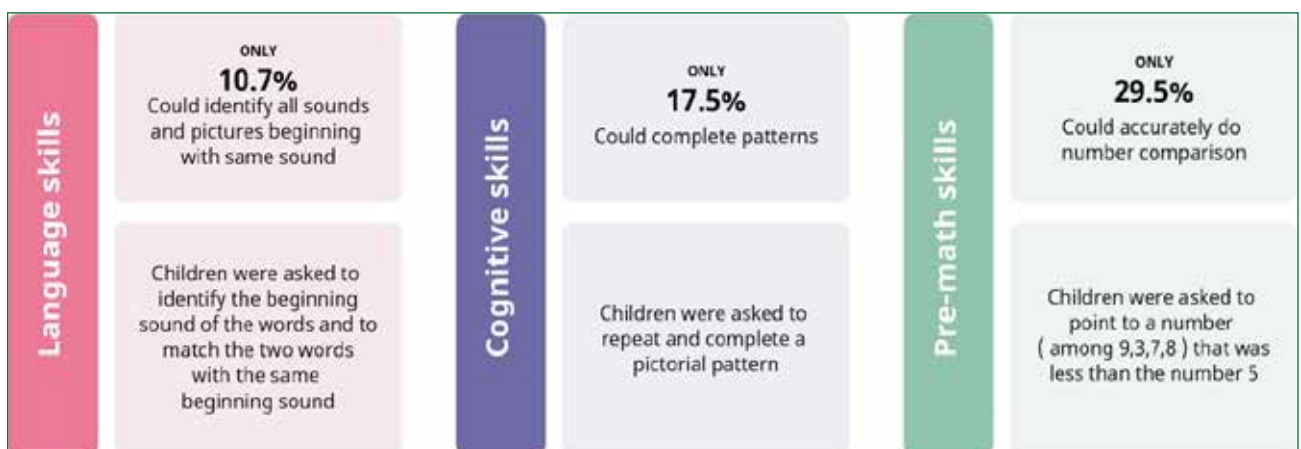The NEP 2020 has taken a big step in making ECCE a core Policy imperative:

"Universal provisioning of quality early childhood development, care, and education must … be achieved as soon as possible, and no later than 2030, to ensure that all students entering Grade 1 are school ready."[6]

Following NEP 2020, detailed guidelines for ECCE and FLN have been formulated through the National Initiative for Prociency in Reading with Understanding & Numeracy or NIPUN Bharat. These have generated a buzz in the ecosystem to create impact in the ECCE space and maximise opportunities for every child's future in India. What is critical now is implementation.
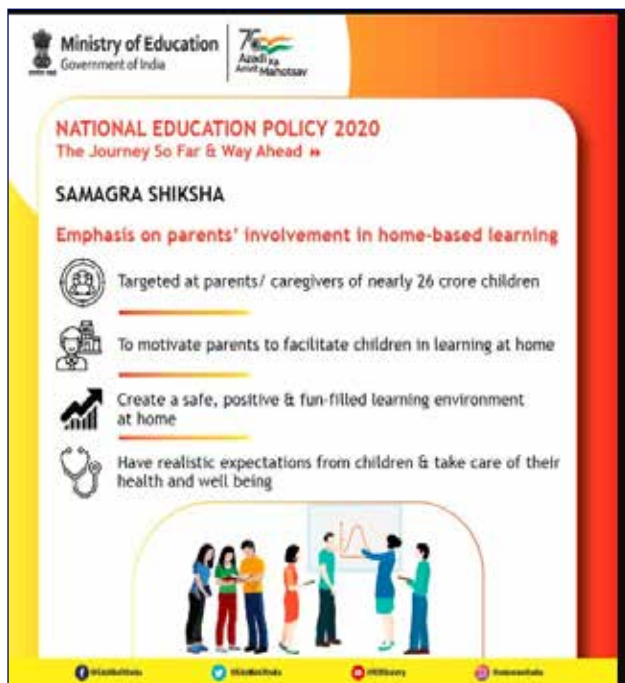
Improving ECCE

NEP 2020 and NIPUN Bharat emphasise the need to involve parents/family in the learning.

The current parent/caregiver mindset is "These are the days for play." NIPUN Bharat directs us to barriers such as parents/caregivers "do not have a role to play in education if they themselves are not literate, or that their role ends at sending their child to school." It proposes that change be brought about through campaigns, events, etc., drawing on key insights from successful public

| Language skills | ONLY 10.7% Could identify all sounds and pictures beginning with same sound | Children were asked to identify the beginning sound of the words and to match the two words with the same beginning sound | Cognitive skills | ONLY 17.5% Could complete patterns | Children were asked to repeat and complete a pictorial pattern | Pre-math skills | ONLY 29.5% Could accurately do number comparison | Children were asked to point to a number (among 9,3,7,8) that was less than the number 5 |

How school-ready are children in India? (ASER 2020)

Ministry of Education tweet emphasising parents' involvement in children's learning (2021c)

programmes like Polio eradication and Swachh Bharat in order to make ECCE a *Jan Andolan* or People's movement.[12]

The MoE "Guidelines for Parent Participation in Home Learning" mentions a key strategy for early learning, that is to "turn every day routines into fun playful moments for learning and brain development". Underlying this conversion is the important fact that *a child is learning all the time, and therefore, play is learning.* The "Guidelines" provide an A-Z listing of moments and activities that can be conducted, for eg. Kitchen drummer: Turn over safe, shatter-proof bowls, pots, and pans to make a set of drums straight from your kitchen; Connect with nature: Encourage children to observe the flowers, trees, plants, leaves, birds, butterflies, insects in the local environment.[13] In all this, the child is learning– while drumming, playing outside in nature, while interacting with parents/caregivers, peers, etc.

As early as the 1950s, Robert Havighurt in his book *Human Development and Education* spoke of 'teachable moments' in the context of children learning: "When the timing is right, the ability to learn a particular task will be possible. This is referred to as a 'teachable moment', or for the child, a learning moment during play, because a child is immersed in the

> As early as the 1950s, Robert Havighurt in his book Human Development and Education spoke of 'teachable moments' in the context of children learning: "When the timing is right, the ability to learn a particular task will be possible. This is referred to as a 'teachable moment'."

activity, it carries immense potential to become optimal learning moments.

It is critical for both mother as well as father to play a role in the creation of learning moments. Though it is well recognised that it is the mother who is primarily involved in the child's learning, studies show the unique role that fathers play in the cognitive skills development of a child.[14] It has been found that male caregivers report higher levels of overall satisfaction compared with female caregivers[15], thus opening up an opportunity for planned interventions to involve fathers/ male caregivers.

In addition to awareness, empowering caring adults to create learning moments is critical, for instance:

- Can access to local language resources (games, stories, activities etc) be enabled for caregivers, anganwadi workers, teachers?.[12]

- Can the learning outcomes for preschoolers across the three developmental goals[12] be made understandable, accessible, and usable for parents? This would align with the MoE's "Guidelines" that stress the importance of parents/caregivers to measure learning progress, "For pre-schoolers monitoring of progress must be part of the activities that are conducted with them."[12] The ability to measure could serve as caregiver motivation to sustain participation in children's early learning.

- Can there be a national caregiver helpline where caring adults can get guidance, in their local language, about child development- from tips on nutrition, child care, early learning to initial assessments on developmental delays and learning difficulties?

- Can there be a platform that offers everything "Early Learning" – from curriculums, TLMs & resources, including books, toys & how-to guides for teachers, anganwadi workers, caregivers?

- Can 'words' become a means to open the world of language to children- with word activities and word games messaged to caregivers?

Technology Divide to Dividend

Technology is a means to fulfill a societal purpose. For this, technology has to mould itself to fit the needs of caring adults rather than caring adults having to mould themselves to fit technology. Technology in the ECCE space is not child facing but can become a powerful tool to empower and enable caring adults (caregivers, teachers, anganwadi workers) to

raise the quality of interactions with their children in the physical world. It can aid in the creation of more learning moments through providing relevant, usable information, and easing discovery of child resources.

Two key findings of the ASER Report 2021 on the use of technology for learning during the Covid-19 lockdown are that availability of smartphones has almost doubled from 2018-2021 and that since the lockdown, 1 in about 28 households have purchased a smartphone for studies.[11] This signals a critical shift in parental mindset about the use of smartphones for learning. How can this be leveraged for ECCE at home?

Language as a Resource, not Barrier

Multilingualism in the context of teaching-learning has conventionally been seen as a challenge. Can the multilingual classroom be turned into a resource rather than a barrier for learning? NEP 2020 lays emphasis on "multilingualism and the power of language" arguing for a promotion of home, local, and regional languages as "It is well understood that young children learn and grasp nontrivial concepts more quickly in their home language/mother tongue."[6] The UNICEF-LLF "Guidelines for Implementation of Early Learning Programs" reiterates that including children's languages helps to promote "an equitable learning environment", "a strong scaffold for learning the school language", and "higher order work like thinking, reasoning and expression."[16]

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NEP 2020 argues for children to be exposed to multilingualism early on "as research clearly shows that children pick up languages extremely quickly between the ages of 2 and 8 and that multilingualism has great cognitive benefits to young students".[6] It recommends generation of textbooks, TLMs, and "enjoyable and inspirational books" in local languages to support the multilingual approach, including through technology-assisted translation.[6]

Inclusion of All

NEP 2020 advocates inclusion of all Socio-Economically Disadvantaged Groups (SEDGs) at the three levels of access, participation, and learning outcomes. NEP 2020 specifically calls out that "children who come from families that are economically disadvantaged" reap the "greatest dividends" with an early childhood education. It draws attention to:

- disparities experienced by socio-cultural groups based on caste, tribe, and religion

- the need to bridge the alienation children from tribal communities experience, both culturally and academically

- certain geographical areas contain significantly larger proportions of SEDGs, and hence these areas should be declared Special Education Zones (SEZs), where all the schemes and policies are implemented to the maximum

- specially targeting girls, who cut across all underrepresented groups, making up about half of all SEDGs and as a means to secure learning for "not just in the present but also in future generations."

- ensuring inclusion and equal participation of children with disabilities in ECCE, in particular through assistive devices, appropriate technology-based tools, and language-appropriate teaching-learning materials. Technology-based solutions for orientation of parents/caregivers and learning materials to actively support their children's learning needs will be accorded priority.

- Support to teachers to sense & identify learning disabilities early and plan for their mitigation. Not the least, it emphasises a change in school culture to remove biases and stereotypes in order to develop respect for diversity.[6]

Conclusion

Now is the moment in India to target the challenge of quality early childhood education. With a decreasing child demographic, the problem is a solvable one. Despite the setback due to the pandemic, with the trend of children now returning back to schools, we need to expand the opportunities to the youngest children of India, for the future depends on how our youngest children are empowered to learn and craft their own future in a fast-paced, ever changing world. Policy intent exists, what is now required is an ecosystem to create, contribute, and leverage building blocks required to create diverse solutions and resources as public goods for the sake of the early years child. ❑

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Music and its Significance

Dr Kasturi Paigude Rane

Food, shelter, and clothing have traditionally been the basic needs of survival for the human race. The modern times require one to depend upon art, education, health care, and sanitation which are equally important for humans to thrive. As we progress from being a developing nation to a developed one, there is a shift in the basic needs of human beings. Music plays a significant role in our daily lives. India has a rich cultural heritage with varied traditions of music and art forms all across the country. Some of these can be traced back to the Vedic Ages. While some have evolved over the time and stayed, a few have got lost with time and forgotten.

The first line of a shloka in Bhartruhari Neetishatakam says, साहित्यसङ्गीतकलाविहीनःसाक्षात्पशुःपुच्छविषाणहीनः।

It means that a person devoid of the knowledge of literature, music, and arts is no different from an animal without a tail or horns. Such an animal would be perceived as imperfect; similarly, a person without the knowledge of literature, music, and arts cannot be called learned. Music is important at every step in education. It is all the more necessary in school education. And yet, it is being inadequately promoted in most schools across the country. It is often treated as an extra-curricular activity. Unfortunately, due to this outlook many schools have started excluding music from their curriculum or have limited it to a single music session of forty-five minutes once a week to make room for other subjects. If music is removed from school education or is given lesser importance, younger generation will no longer enjoy the benefits of intangible results that music offers. Instead, schools should take on robust music programmes for students.

Importance of Music in Schools

Integrates Varied Subjects

Music integrates varied subjects simultaneously. Music education not only allows children to develop their musical aptitude, but it also gives them an opportunity to develop their mathematical skills- incorporate fractions, science skills, and gain knowledge of history. Additionally, it improves their grades, motor skills, and cognitive ability.

Moreover, it enhances brain functions, increases the happiness index, leads to better emotional development, and lowers stress levels in children in the process.

Instills Discipline and Concentration

Learning and practicing music develops time management skills and gives children a direction and focal point. Inculcating these values early in life has innumerable benefits on a child's future. For example, if children begin to learn these values during pre-primary or primary school, they will be able to deal with the work load in high school more effectively

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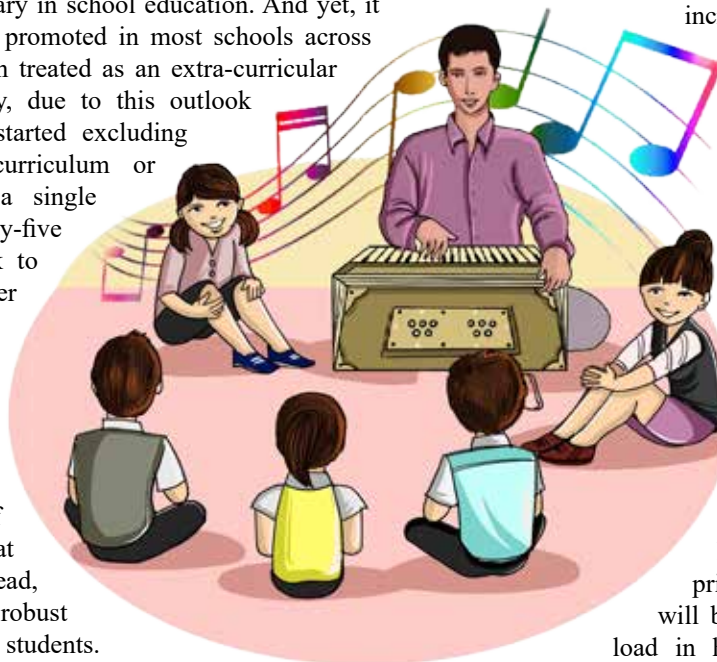
The author is a Hindustani classical vocalist, academician and visiting faculty of music at Lalit Kala Kendra, Savitribai Phule Pune University. Email: paigude.kasturi@gmail.com

Many researchers and music practitioners from the western world are in awe of our music and on the other hand, we have to continuously struggle to retain music as a subject in schools and junior colleges in India. Every child in our country has the right to get exposed to classical music and other art forms. The responsibility of giving the right exposure to the children lies largely with parents and schools, and early exposure of classical music during their school years becomes helpful when a child is receptive and their sensitivities are developing.

Music in Secondary School

Music not only relieves the burden of syllabus on children, but also brings down the conflicts and disputes in their mind. Moreover, it offers them opportunities to bring out their emotions. Expressing creatively through music enables children to keep up their emotional stability and harmony due to enhanced aesthetic standards developed in them. At this crucial stage, if music becomes a discipline which the child can pursue for higher studies, it can prove to be beneficial for them as music learning at this stage can be linked with college education.

Encouraging practice and theory of the subject and giving equal importance to both would prove to be useful. Discussions about how musical instruments work will involve understanding about physics of sound and can be interesting and engaging for the students. Not only is it crucial to develop a historical viewpoint of our age-old traditional musical forms, but it is equally important to inspire the students to learn the language and vocabulary of the subject and give a clear understanding of the different terminologies of music. At this point in time, students can develop an ear for aesthetics and they can be encouraged to understand the qualities of a *raga* and identify different *ragas* by singing or playing its *swaras*. Developing aesthetics happens through listening sessions and from experiences such as attending live classical music performances by a guru. A basic sense of classical music can be developed through teaching *taal*, notation systems, singing *swaras*, and basic compositions.

Music as an Established Subject

Music should be encouraged and included in schools and colleges as a mainstream subject. 'Music' and 'Culture' are often very widely and loosely used terms in our society because of which many inappropriate

and the chances of them excelling at high school would be higher. Excelling in high school would allow a student to choose a reputable institute of their choice for higher education, resulting in better job prospects as an adult.

Stimulates and Enhances Brain Development in Children

Various studies have shown that learning and practicing music can lead to improved brain development of children. A study at Northwestern University found that the students who sing or play a musical instrument have better neural processing than the students who simply listen to music. Thus, receiving music education is important rather than just turning the music on in the background while children are working on other subjects.

Exposure to Indian Classical Music and Arts

India has a rich cultural heritage with varied traditions of music and art forms all across the country. Some of them are hundreds of year-old traditions. While some traditions have evolved and stayed, some are endangered, and a few have even been lost with time.

> Music education not only allows children to develop their musical aptitude, but also gives them an opportunity to develop their mathematical skills- incorporate fractions, science skills, and gain knowledge of history. Additionally, it improves their grades, motor skills, and cognitive ability.

concepts are conveniently clubbed under these categories. Music has an inherent quality of engaging, but problems arise when parents and schools only seek 'entertainment' in music whereas Indian classical music and our age-old art forms offer benefits to children way beyond entertainment which often go unnoticed. Students who engage themselves in music and devote more time to learning and practicing it indulge less in non-productive activities such as watching screen for longer hours. The advantages of music are extensive and far-reaching and do not lead up to any child's race, ethnicity, or social background.

Anyone who has mastered singing or playing a musical instrument would know that musical excellence is hard to come by. It requires years of practice and a willingness to keep going. It requires perseverance to refine and progress in music. School-going children having an understanding that they have to keep their nose to the grindstone to achieve something that is unbelievably powerful and something they will depend on for the rest of their lives. There are only a few better options to inculcate perseverance other than music.

Musicians devote their life practicing music with focus and discipline. Improvisation in music offers unlimited capacity and opportunities for improvement which can encourage the students to constantly push the limits and do better, thus helping in development of brain, sensitivities, and formation of human connections. Improvisation is the first step towards innovation which can prove to be beneficial for a student.

Music education from a young age has proved to be a well-founded predictor of success in higher education and professional life as well. According to the records, the first rate engineers and technical designers in Silicon Valley in the US along with a large number of students studying at the IITs, IIMs, IISERs, IIScs, and many other top colleges and universities in India are practicing musicians.

Let us not fail to remember that Albert Einstein, the greatest physicist of the late 19th-20th century was a highly skilled musician. Einstein used music as a doorway and means to dwell upon and create his significant inventions.

Dr APJ Abdul Kalam, the former President of India had learnt to play *veena* during 1985-95 when he was with the Defence Research and Development Organisation (DRDO). He practiced playing *veena* whenever he felt relaxed and was free from his demanding schedule.

The great violin teacher Shinichi Suzuki once said "The purpose of music education is to train children, not to necessarily be professional musicians but to be fine musicians and to show high ability in any other field they enter."

Schools and colleges should take the responsibility along with parents, to foster and nurture the knowledge, understanding, and skill of arts in students so that they become balanced, sensitive, creative, progressive, and inspired members of the society. Needless to say, the most fundamental subjects such as maths, science, and history are crucial. Nonetheless, subjects like music are also equally essential and important. For the many, worthwhile advantages and benefits that music education offers needs to be encouraged, nurtured, and promoted as a key module of elementary and secondary education.

Today, few movements like SPIC MACAY (Society for the Promotion of Indian Classical Music And Culture Amongst Youth) are working voluntarily in India and abroad to take Indian classical music to each and every child in the country. Though SPIC MACAY drives this cause and acts as a facilitator between an artist and a school, it is important for institutions to be equally passionate towards this cause and drive it further. It will help music to be included in our education system to a great extent. Yearly allocation of a separate budget for classical music to such movements and for central and state universities through education department will encourage and enable music education in its truest sense.

Conclusion

Lastly, along with learning music, a regular exposure of experiencing a live concert by a guru performing in front of children can give magical results. The time spent in the 'Sangat' of an inspired soul or guru can be a life changing experience for a student which probably would be treasured for the rest of his life. Our responsibility hence should be to create such opportunities often.

Therefore, the benefits that music education offers are way beyond academic excellence and consist of no language barrier. Its applications in today's fast moving world are truly inspiring and liberating. Hence, music education should not only be retained in schools and colleges but should be made mandatory and not kept optional anymore. ❑

> Discussions about how musical instruments work, will involve understanding about physics of sound and can be interesting and engaging for the students. Not only is it crucial to develop a historical viewpoint of our age old traditional musical forms, but it is equally important to inspire the students to learn the language and vocabulary of the subject and give a clear understanding of the different terminologies of music.

Dr S Radhakrishnan
by P. Nagaraja Rao

The first Vice-President of free India who went on to become the President later, Dr S Radhkrishnan, was a great scholar and philosopher of our times. He picked up gems from the treasure of ancient Indian religious and philosophical literature like *Bhagvad Gita, Upanishads, Brahma Sutra,* etc., and wrote commentaries on them. He was an erudite scholar on varied facets of Indian wisdom. The striking features of his works are the supremacy of spiritual values to be imbibed, the need for a positive attitude towards life and compassion for all. He received many honours including the Knighthood and the *Bharat Ratna*.

The author of this book, a distinguished scholar of philosophy and academician, was associated with several prestigious universities. He has written several books on ancient Indian philosophy and religion. ❑
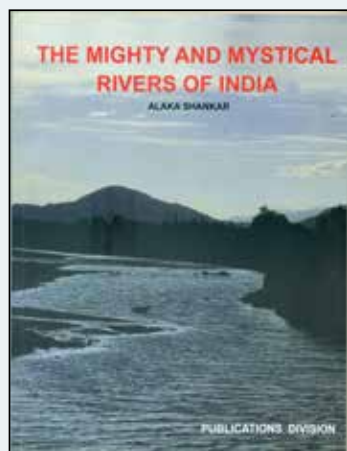
Author: P. Nagaraja Rao
Price: Rs 110

At the inauguration of the Science Congress 21 January, 1959

Broadcast to the nation on the eve of Independence Day. 15 August, 1963

The Mighty and Mystical Rivers of India
by Alaka Shankar

Author: Alaka Shankar
Price: Rs 350

India abounds in rivers that transcend from the peak of the Himalayas, whose waters merge into the many seas landscaping the continent and finally flow into the Indian ocean. Each river, be it Ganga, Yamuna, Brahmaputra, and many more, has its own glorious past and unique personality, as distinct as the land with its rich culture. *The Mighty and Mystical Rivers of India* is a story of rivers that are the main arteries of sustenance, throbbing with hope and life, detailing the richness and importance of their presence. This book prompts to explore and seek more about the rivers that branch out from their main source, carrying along with them the resonances of the people, their culture, and the invaluable heritage of the years gone by.

The author of this book is a distinguished personality known for her versatility and her work as a broadcaster. She has published several books and created over a hundred cassettes of diverse literary and cultural interests for children. ❑

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