NEP 2020: Implementation Strategies

NATIONAL INSTITUTE OF EDUCATIONAL PLANNING AND ADMINISTRATION

(Deemed to be University)

17-B, Sri Aurobindo Marg, New Delhi - 110016 (INDIA)

December 2020

NEP 2020: Implementation Strategies

NATIONAL INSTITUTE OF EDUCATIONAL PLANNING AND ADMINISTRATION

(Deemed to be University)

17-B, Sri Aurobindo Marg, New Delhi - 110016 (INDIA)

December 2020

First Published – December 2020 (2H)

Disclaimer
The facts and figures stated, conclusions reached and views expressed in the publication are those of the authors/editors and should not be attributed to National Institute of Educational Planning and Administration (NIEPA), New Delhi.

Published by the Registrar, National Institute of Educational Planning and Administration (NIEPA), 17-B, Sri Aurobindo Marg, New Delhi-110016, Designed at Digital Expressions, New Delhi and Printed at M/s Viba Press Pvt. Ltd., Okhla Industrial Area, Phase –II, New Delhi–110020.

PREFACE

THE National Institute of Educational Planning and Administration (NIEPA) has always been extending policy support to the Ministry of Education and other decision-making bodies at the central and state levels. The institute is committed to promoting research and capacity development in educational policy, planning and administration at the federal and decentralised levels. Ever since the National Education Policy 2020 (NEP 2020) was announced in July this year, NIEPA has been engaged in advocating and supporting efforts towards planning for implementation of the policy.

For the purpose, NIEPA constituted a Core Committee comprising senior faculty members and 14 Working Groups comprising its faculty members. A series of consultations and meetings have taken place in groups and in faculty meetings to discuss the strategies for implementation of the NEP 2020. The consultative process helped in identifying the areas where NIEPA could help and support the implementation of NEP 2020. A document containing initial outlines of the themes, thus identified, was submitted to the Ministry of Education (MoE) on 09 October 2020. The Vice-Chancellor informed the MoE that NIEPA faculty members are working on these themes and further elaborating on the implementation strategies.

The present volume is an outcome of these collective discussions and efforts by the faculty members of NIEPA. It contains 13 domains identified from the NEP 2020 where NIEPA could help with its expertise. These domains are divided into 13 chapters in the document. Given the NIEPA's engagements with school and higher education, these chapters cover areas pertaining to both these sectors.

I would like to thank all faculty members of NIEPA for their support and sincere efforts to prepare this document and Professor Avinash Kumar Singh, Head, Department of Educational Policy, for coordinating this process.

Professor N.V. Varghese
Vice-Chancellor

25 December 2020

TABLE OF CONTENTS

Preface *iii*

Abbreviations *xi*

Chapter 1: Early Childhood Care and Education **3**

1.1 Policy Goal 3

1.2 Current Situation: Issues and Challenges 3

1.3 Implementation Strategies 5

1.3.1 Creating Provisions for Access 5

1.3.2 Appointment of Teachers for Early Childhood Education 5

1.3.3 Role of Local Authority and CBOs 6

1.3.4 Research and Capacity Development 6

Chapter 2: Attaining the NEP 2020 Enrolment Targets **11**

2.1 Policy Goal 11

2.2 Challenges and Opportunities for Attaining the Policy Targets 11

2.2.1 Improving Participation, Internal Efficiency and Transition Rates 11

2.2.2 Participation Rates (GER) in Secondary Education and Per Capita NSDP 12

2.2.3 Participation Rates (GER) in Higher Education and Per Capita NSDP 13

2.2.4 Student Flow and Internal Efficiency of School Education 14

2.2.5 Transition Rates from School Education to Higher Education 17

2.2.6 Enrolment Projections: Alternative scenarios 18

2.3 Implementation Strategies 20

2.3.1 Setting Enrolment Targets in School Education 21

2.3.2 Setting Enrolment Targets in Higher Education 26

2.4 Conclusions 32

Chapter 3: Efficient Resourcing and Effective Governance through School Complexes **55**

3.1 Policy Goal 55

3.2 Issues and Challenges 55

3.3 Implementation Strategies 56

3.3.1 Develop Criteria for Identifying the Lead Secondary/Higher Secondary Schools 56
3.3.2 Specify Academic and Administrative Functions 56
3.3.3 Identify Indicators for School Complex 58
3.3.4 Develop Guidelines for School Complex Management Committee 60
3.3.5 Establishment of Committees under the School Complex 60
3.3.6 Preparing a School Development Plan and School Complex Development Plan 61
3.3.7 Roles of Support Institutions 63
3.3.8 School Complex Leadership Development 64

Chapter 4: Equity, Diversity and Inclusion in School and Higher Education 67

Part I: School Education

4.1 Policy Goal 67
4.2 Issues and Challenges 67
4.3 Implementation Strategies for School Education 68
4.3.1 Strategies for Overcoming Regional Disparities 68
4.3.2 Strategies for Gender Disparities 69
4.3.3 Strategies for Social Group Disparities 69
4.3.4 Strategies for Minorities 69
4.3.5 Inclusion of Children with Disabilities (CwD) 70

Part II: Higher Education

4.4 Equalising Access to Higher Education Opportunities in India 71
4.5 Issues of Concern 71
4.6 Implementation Strategies for Higher education 72
4.6.1 Regional Disparities 72
4.6.2 Increasing Access to Students from the SEDGs in HE 73
4.6.3 Achieving Academic Integration and Social Inclusion 74
4.6.4 Challenges of Social Inclusion 74
4.6.5 Areas and Strategies for Implementation 76
4.6.6 Strategies for Making Campuses Socially Inclusive 77
4.6.7 Increasing Employability Potential of HE Graduates Equitably 79
4.6.8 Strategies for Implementation 80

Chapter 5: Standard Setting and Accreditation for School and Higher Education 85

Part I: School Education

5.1 Policy Goal 85
5.2 Current Practices 85

5.3 Implementation Strategies 87
5.3.1 Framework for Establishing and Operationalisation of State School Standards Authority (SSSA) 87
5.3.2 Standard Setting and Development of School Quality Assessment and Accreditation Framework (SQAAF): Building on Shaala Siddhi Programme 90
5.3.3 Academic and Curricular Standards Linked to Development of School Quality, Assessment and Accreditation Framework (SQAAF) 90
5.3.4 Development of Training Modules and Capacity Development on Standard Setting and School Evaluation/ Accreditation 91

Part II: Higher Education

5.4 Policy Goal 96
5.5 Current Situation 96
5.6. New Accreditation Arrangements: Strategies for Implementation 97
5.6.1 Setting up of the National Accreditation Council (NAC) by the Ministry of Education (MoE): Developing the Architecture 97
5.6.2 Establishing Accreditor Recognition Policy through collaborative Task Force 97
5.6.3 Scrutinising/Monitoring the Accrediting Organisations 98
5.6.4 Process of Accreditation and Indicators of Institutional Assessment 99
5.6.5 Preparing Institutions for the New Accreditation Regime 99

Chapter 6: Teacher Management and Development 103

6.1 Policy Goal 103
6.2 Current Situation: Issues and Challenges 103
6.3 Implementation Strategies 104
6.3.1 Teacher Management 104
6.3.2 Teacher Management Information System (TMIS) 105
6.3.3 A Model Framework for Teacher Rationalisation 106
6.3.4 Development of Teacher Professional Standards 107
6.3.5 Service Environment and Culture 108
6.3.6 Teachers' Continuous Professional Development 109

Chapter 7: Operationalisation of Multidisciplinary Universities and HEI Clusters 113

7.1 Policy Proposal 113
7.2 Implementation Strategies 114
7.2.1 Operationalising Multidisciplinary Institutions (MI) 114
7.2.2 Transition from Affiliating System to Large MIs 115

Chapter 8: Institutional Development Plans in Higher Education 121

8.1 Policy Goal 121

8.2 Implementation Strategies 121

8.2.1 Status and Diagnosis of the Institution 122

8.2.2 Setting Targets 124

8.2.3 Evolving Strategies to Meet the Targets 124

8.2.4 Governance Structures and Processes 124

8.2.5 Academic Programme 125

8.2.6 Human Resource Management 125

8.2.7 Student Support System 126

8.2.8 Financial Plan 126

8.2.9 Process of Implementation, Monitoring and Evaluation 126

Chapter 9: Vocationalisation and Skill Development in School and Higher Education 129

9.1 Policy Goal 129

9.2 Current Situation 129

9.3 Implementation Strategies 130

9.3.1 Mapping the Landscape of Vocational Education 130

9.3.2 Enrolment in Vocational Education at Higher Education Level 134

9.3.3 Skill Mapping to Identify Skills to be Emphasised in Different Regions 140

9.3.4 The Skills to be Aligned with National Skill Qualification Framework (NSQF) 140

9.3.5 Integrating Vocational Education with General Stream 140

9.3.6 Capacity Development Programmes for Teachers 142

9.3.7 Developing a Framework for Recognition of Prior Learning (RPL) 143

Chapter 10: Reforming Structures of Governance in the Federal Framework of Education 147

Part 1: School Education

10.1 Policy Goal 147

10.2 Implementation Strategies 148

10.2.1 Demarcation of Role and Responsibilities between the Department of School Education and Directorates of School Education 148

10.2.2 Re-Alignment of Role and Responsibilities of District (DEOs) and Sub-District Administration (BEOs) in the Changing Framework of Governance of Schools 149

10.2.3 Realigning the Roles in the Light of the NEP 2020 150

Part II: Higher Education 151

10.3 Policy Goal 151

10.4 Implementation Strategies 151

10.4.1 Transforming the Regulatory System of Higher Education at the State Level 151

10.4.2 Effective Governance and Leadership in Higher Education Institutions 152

10.4.2.1 Institutional Governance in Higher Education in the Framework of Autonomy and Accountability 152

10.4.2.2 Leadership Development Strategies 154

10.4.3 Federal Issues in the implementation 159

10.4.4 Strengthening the CABE 160

10.4.5 Operationalisation Strategy 161

Chapter 11: Operationalisation of National Educational Technology Forum 165

11.1 Policy Goal and Objectives of NETF 165

11.2 Issues and Challenges 166

11.3 Implementation Strategies 167

Chapter 12: Branch Campuses of Foreign Universities in India 171

12.1 Policy Goal 171

12.2 Issues and challenges: Different Models 171

12.3 Implementation Strategies 172

12.3.1 Strategies to Attract 'Top 100' Universities 172

12.3.2 Role of Incentives 173

12.3.3 Ideal Regulatory Environment 174

12.3.4 Procedures for Establishment of Branch Campuses 175

12.4 Challenges and Opportunities: Insights from Interviews 176

Chapter 13: Operationalisation of National Research Foundation 181

13.1 Policy Goal 181

13.2 Scope of the National Research Foundation 181

13.3 Implementation Strategies 183

13.3.1 Roles and Functions of the National Research Foundation 183

13.3.2 Domains / Areas of Focus 183

13.3.3 Structure of the NRF 184

13.3.4 Funding Portfolio 191

13.3.5 Research Promotion Strategies 192

Abbreviations

AACGR	Average Annual Compound Growth Rate
AAEGR	Average Annual Exponential Growth Rate
AC	Autonomous College
AI	Artificial Intelligence
AISHE	All India Survey of Higher Education
AR	Augmented Reality
AW	Anganwadi
BEO	Block Education Officer
BITE	Block Institute of Teacher Education
BoG	Board of Governors
BRC	Block Resource Centre
CABE	Central Advisory Board of Education
CBCS	Choice Based Credit System
CBO	Community Based Organisations
CBSE	Central Board of Secondary Education
CDP	Campus Diversity Policy
CFI	Centrally Funded Institutions
CGPA	Cumulative Grade Point Average
CMP	Career Management and Progression
CODE	Centre for Optimising Diversity and Equity
CPD	Continuous Professional Development
CRC	Cluster Resource Centre
CSR	Corporate Social Responsibility
CwD	Children with Disability
CWSN	Children with Special Needs
DD	Diversity Database
DEO	District Education Officer
DIAC	Dubai International Academic City
DIET	District Institute of Education and Training
DP	Diversity Plan
DSE	District Superintendent of Education
EBB	Educationally Backward Blocks

ECCE	Early Childhood Care and Education
EMIS	Educational Management Information System
GAR	Gross Admission Rate
GB	Governing Board
GER	Gross Enrolment Ratio
GIS	Geographical Information System
GOI	Government of India
HE	Higher Education
HECI	Higher Education Commission of India
HEGC	Higher Education Grants Council
HEI	Higher Education Institution
HM	Head Master
HOSHE	Higher Order Skills for Higher Education
HRM	Human Resource Management
IBC	International Branch Campus
ICDS	Integrated Child Development Scheme
ICSE	Indian Certificate of Secondary Education
ICT	Information and Communication Technology
IDP	Institutional Development Plan
IIM	Indian Institute of Management
IISER	Indian Institute of Science Education and Research
IIT	Indian Institute of Technology
INI	Institute of National Importance
INSET	In Service Education and Training
IQAC	Internal Quality Assurance Cell
ISCO	International Standard Classification of Occupations
J&K	Jammu and Kashmir
JBT	Junior Basic Training
JNV	Jawahar Navodaya Vidyalaya
KHDA	Knowledge and Human Development Authority
KV	Kendriya Vidyalaya
MDM	Mid Day Meal
MERU	Multidisciplinary Education and Research University
MHRD	Ministry of Human Resource Development
MI	Multidisciplinary Institution
MLA	Members of Legislative Assembly
MoE	Ministry of Education

MOHFW	Ministry of Health and Family Welfare
MOI	Medium of Instruction
MR	Mixed Reality
MSDE	Ministry of Skill Development and Entrepreneurship
NAAC	National Assessment and Accreditation Council
NAC	National Accreditation Council
NBA	National Board of Accreditation
NCC	National Cadet Corps
NCERT	National Council of Educational Research and Training
NCF	National Curriculum Framework
NCIVE	National Committee on Integration of Vocational Education
NCTE	National Council of Teacher Education
NE	North East
NEP	National Education Policy
NER	Net Enrolment Ratio
NETF	National Educational Technology Forum
NGO	Non Government Organisation
NHEQF	National Higher Education Qualification Framework
NHERC	National Higher Education Regulatory Council
NIEPA	National Institute of Educational Planning and Administration
NIOS	National Institute of Open Schooling
NIRF	National Institute Ranking Framework
NIT	National Institute of Technology
NPST	National Professional Standards for Teachers
NRF	National Research Foundation
NSDP	National Skill Development Programme
NSQF	National Skills Qualifications Framework
NSSO	National Sample Survey Organisation
OBC	Other Backward Classes
ODT	Online Diversity Test
OFQUAL	Office of Qualifications and Examination
OFSTED	Office for Standards in Education
PAP	Perspective Academic Plan
PMKVY	Pradhan Mantri Kaushal Vikas Yojna
PPP	Public Private Partnership
PTA	Parent Teacher Association
PwD	Person with Disabilities

RPL	Recognition of Prior Learning
RPWD	Rights of Person with Disabilities
RTE	Right to Education
RU	Research Universities
SC	Scheduled Caste
SCDP	School Complex Development Plan
SCERT	State Council of Educational Research and Training
SCF	State Curriculum Framework
SCMC	School Complex Management Committee
SDP	School Development Plan
SEDG	Socio Economically Disadvantaged Group
SES	Socio Economic Status
SEZ	Special Education Zone
SFD	Special Focus District
SHEC	State Higher Education Council
SHEDP	State Higher Education Development Plan
SMC	School Management Committee
SQAAF	School Quality Assessment and Accreditation Framework
SSEF	School Standards and Evaluation Framework
SSSA	State School Standard Authority
ST	Scheduled Tribe
STEM	Science Technology Engineering and Mathematics
SWOC	Strengths, Weaknesses, Opportunities and Challenges
SWOT	Strengths, Weaknesses, Opportunities and Threats
TGT	Trained Graduate Teacher
TLCs	Teacher Learning Centres
TMIS	Teacher Management Information System
TU	Teaching Universities
TVET	Technical Vocational Education Training
UDISE	Unified District Information System for Education
UFI	UGC Funded Institutions
UG	Under Graduate
UGC	University Grants Commission
UNICEF	United Nations International Children's Emergency Fund
UT	Union Territories
VE	Vocational Education
VR	Virtual Reality

CHAPTER

1

Early Childhood Care and Education (ECCE)

CHAPTER

1

Early Childhood Care and Education (ECCE)

1.1 Policy Goals

The NEP 2020 emphasises universal provisioning of quality early childhood development care and education for all children from the age of 3 years, to be achieved by 2030. The expansion of ECCE is proposed through four pronged strategies: a) stand-alone Anganwadis; b) Anganwadis co-located with primary schools; c) pre-primary sections co-located with primary schools; and d) stand-alone pre-schools. The NEP further highlights Universal foundational literacy and numeracy to be achieved by 2025.

1.2 Current Situation: Issues and Challenges

The NEP 2020 considers the age of 3-8 years as the foundational period for overall development of children. The provisioning of institutionalised educational facilities for children before they embark on formal school education at the age of six has a two-fold role to play. On the one hand, pre-school education significantly aids in the overall development of a child, involving its physical, social, emotional and cognitive aspects. On the other hand, education prior to primary schooling, as research evidences show, tends to have a major impact on her/his future learning prospects. Thus, it is a widely known fact that, the pre-school education lays the foundation and creates readiness among children to pursue formal school education.

Further, research evidence indicates that the children between the ages of four to six become mentally ready for more structured, but play based, learning environment. All children and those from disadvantaged communities in particular, require at this stage an appropriate school readiness programme which ought to be directed by the child's interests and priorities in contextualised and flexible manner.

As per the Census (2011), India has 158.8 million children in the 0-6 age group, of which around 60 million children are estimated to be in the age group of 3-6 years. In India, although the gross enrolment ratio at pre-school level has been recorded at about 55 per cent over time, there are still approximately 20 million children accounting nearly 27 per cent of the total in the three-to-six-year age group who are not attending pre-school (UNICEF, 2016). This demands that India must ensure a significantly higher enrolment in pre-schools for improving education outcomes at the elementary and secondary levels. The *State of the World's Children Report 2016* by the agency pointed out that children in the "poorest families and in the marginalised communities are often left behind". While 34 per cent of Muslim children did not attend pre-school, around 25.9 per cent Hindus and 25.6 per cent Christians also could not attend pre-school education. The proportion of such children was nearly 30 per cent among Scheduled Castes. Anganwadi centres cater to 3.7 crore children through 13.7 lakh Anganwadi centres (45 per cent centres or six lakhs and three thousand are co-located within school complexes). The ICDS necessarily caters to child care, of which education is one of the components. But Anganwadi workers are not oriented to meet the school readiness programme of children of 3-6 years of age. The access to preschool education, therefore, needs to be improved as the initial years of child are crucial and cognitive and intellectual developments take place faster during these years.

TABLE 1. Status of ECCE in India: Some Key Statistics

Data	No.	Source
Total No. of Anganwadi centres operational	13,77,595	ICDS report updated as on 30th June 2019
Total child population of 6 months to 3 years age cohort	3,82,03,017	ICDS report updated as on 30th June 2019
Total child population of age 3-6 years	3,05,09,301	ICDS report updated as on 30th June 2019
Total No. of Anganwadi workers/ teachers	13,77,595	ICDS report updated as on 30th June 2019
Total No. of schools	11,68,292	UDISE (2018-19) (Provisional)
Total schools with primary sections	8,26,842	UDISE+ 2018-19 (Provisional)
Total primary schools with pre-primary sections	1,94,768	UDISE+ 2018-19 (Provisional)
Total No. of schools to be covered for preparatory class	7,01,537	Schools excluded having already pre-primary sections
Total No. of children enrolled in the attached pre-primary section	29,94,751	UDISE 2017-18 (Provisional)

Source: NCERT and MHRD

According to the UDISE data (NIEPA, 2016-17), around 22.03 per cent primary schools had pre-primary schooling, against the 22.41 per cent recorded in 2015-16, enrolling around 7.7 per cent children in it. According to the UDISE 2018-19 the number of children receiving Pre-school education in different types of schools is 1,19,30,307 out of which 45.70 per cent is girls and 54.3 per cent are boys, indicating considerable gender gap in enrolment. Despite this substantial coverage7,01,537 primary schools are yet to be covered for pre/primary sections or preparatory class. According to the recent data of NSSO 75th (GOI, 2019), around 5.7 per cent children of its total sample were found availing pre-primary education. The proportion of children attending is slightly higher for girls (5.8 per cent) and for those living in urban area (7.4 per cent). It has also been observed that pre-school education facility is available in almost all private schools and, as per NSSO, around 55.2 per cent children are availing unaided private pre-primary schools and around 12 per cent are enrolled in private aided schools. Although a higher proportion of pre-school goers attend private schools, "the private providers are largely unregulated. So, there is a need to have a regulatory body for maintenance of the quality of pre-school education" (GOI, 2019).

The proportion of children attending pre-primary education in Government schools is only 32.7 per cent indicating differentiation in schooling access by management of schools at this stage. There are many challenges posed in ongoing efforts pertaining to universalisation of ECCE. Some of the major challenges include the following: provisioning of adequate quality preschools with necessary physical and academic infrastructures: play materials, teaching learning materials, barrier-free access to all indoor and outdoor spaces; and separate toilets for boys and girls, for different ages of children; safe and comfortable school environment ensuring availability of appropriate accessories and facilities for children with special needs.

In a nutshell, it is required to make pre-primary schools not only universal but also efficient for holistic development of young children as per the accepted guidelines provided by different experts from time

to time. One of the major challenges at this stage is that of learning disparity among children. Due to differentiation in access, many children do not find adequate learning opportunities at this level.

1.3 Implementation Strategies

1.3.1 *Creating Provisions for Access*

The access to pre-school education needs to be improved as the initial years of a child are crucial and cognitive, and intellectual developments take place during these years. Prior to the age of five (that is before class 1), every child has to attend pre-preparatory class or Bal Vatika of one year. One of the important issues regarding access is to provide space for pre-school education in primary schools for which either new early childhood centres/preschools need to be opened or pre-school section or AWCs can be integrated with existing formal schools.

- Each and every primary school needs to be provided with ECCE or pre-school facility (integrating AWs or opening new pre-school section) following the existing norm of opening primary schools. Population and distance norms for opening new pre-primary schools/ sections/ relocation, etc, need to be developed for smooth expansion of ECCE/ pre-school facilities as per the geographical background of the states.
- Assessment of the present access conditions of pre-school has to be done with the help of data which may be collected through surveys. It is required to develop an EMIS for pre-school level, too, at the school, cluster, block and district levels which can be consolidated at the state level. One needs to identify areas where new pre-schools and the institutional arrangements for the provisions are to be made. This analysis will also help in identifying location with dominant presence of marginal groups for creating better ECCE facilities for them.
- Mapping exercise needs to be undertaken to assess the availability of ECCE facilities by regions/clusters/ blocks/districts. It is also important identify and assess the readiness of existing primary schools where pre-school education can be initiated by 2021. This would help to decide whether separate institutions to be created or existing pre-school can be made an integral part of nearby primary schools.
- Each pre-school facility, provided by different agencies (AWs, government schools, private schools and NGO run schools) needs to be connected with school clusters as mentioned in the NEP 2020 and may be included in the SCMC plans.
- A guideline can be prepared for facilitating coordination and convergence of inter-ministerial engagements in diverse activities relating to ECCE or pre-school at the local level. The guideline would provide support for coordination of inter- and intra-departmental functions and for integration of Anganwadis with primary schools. School complexes would help to facilitate this integration of Anganwadis and primary schools or opening new pre-school sections and monitoring its quality.

1.3.2 *Appointment of Teachers for Early Childhood Education*

- Qualified and trained teachers are to be recruited as per the need of schools and capacity building of teachers for pre-school needs to be given priority. It is necessary to decide on the teacher-pupil ratio that needs to be followed as a norm at the pre-school level for recruitment and deployment of teachers.
- The teachers are to be trained in creating a child friendly environment through activity-based teaching-learning methods to attract these children to school. Play materials, books and other teaching learning materials need to be provided as per the need of the child.

- Special teachers may need to be recruited to address the different needs of young disabled children and, along with teaching methods, all infrastructures and teaching learning materials need to be made available to make classroom environment disabled friendly.

1.3.3 *Role of Local Authority and CBOs*

- The local government authority (DEO/BEO/BRC/CRC etc.), in collaboration with school clusters, NGOs and community based organisations, may be engaged to establish pre-schools for young children in every neighbourhood as per the norms and standards specified.
- An inter-ministerial/inter-departmental 'Convergence Committee' may be formed for provisioning of pre-school education, ensuring its effective functioning on regular basis. The committee will comprise officials from Ministries/Departments related to Women and Child Development, Ministry of Education, Labour, Health and Nutrition, Social Justice and Empowerment/Social Welfare, Food and Civil Supplies, and Water. Social mapping of availability of schooling facilities as well as access and participation of children in a disaggregated manner (according to sex, social and income categories) may be conducted. Social auditing may also be conducted from time to time.
- A special committee may also be constituted at the institution level (school/Anganwadi) involving SMC members, teachers teaching pre-school level and early grades to track these children's admission, attendance and learning outcomes so that it becomes possible to find out their interests, learning needs and support they need for further improvement of their performance. It is also possible to track children's attendance status and their grade progression and transition to the next level.
- This committee also can provide various other supports to schools, i.e., interact with parents for making them aware about the value of pre-school education for development of children, providing support to parents in case they find it difficult to access to pre-school education for their children, and so on. While doing so, special attention needs to be given to the children with special needs and also to those affected by multiple and cumulative disadvantages.
- School Clusters, through their SCMCs, may collaborate with these committees and provide them support needed for small schools. It may develop appropriate monitoring system for school education through digital mode or an on-site visit as per the need arises.
- Registration and accreditation of early childhood education in each state should be monitored by child enforcement agencies.

1.3.4 *Research and Capacity Development*

In order to support the implementation of ECCE programme, as envisaged by NEP 2020, different agencies and universities including NIEPA may conduct research studies and provide training for capacity building of different stake holders involved in planning and implementation of NEP 2020 specially for ECCE. This may include following aspects:

- Mapping geographical and socio-cultural diversities prevailing in pre-school education and their impact on foundational literacy and numeracy of children at pre-school and primary levels.
- Conducting diagnostic researches on different groups of student population to assess equity gaps in pre-school education and finding out strategies for bridging those gaps. While doing so best practices pertaining to pre-school education can be studied to find out suitable strategies.

- Developing capacity building programmes for school heads and teachers for school management as well as development of school development plans for an effective pre-school programme in government schools and Anganwadi. The training would also need to be provided for managing schools ensuring better equity and inclusion and for integrating pre-school section with the primary/secondary school.
- Capacity building of administrators for preparing district/block level plans for the integrated school education for providing access of children to quality pre-school education and facilitating them to transit to primary school and their retention and further learning. It is also required to develop an appropriate mechanism for regular monitoring of functioning of pre-school sections attached to schools and providing support to school heads and teachers for its effective functioning.

CHAPTER

2

Attaining the NEP 2020 Enrolment Targets

CHAPTER 2

Attaining the NEP 2020 Enrolment Targets

2.1 Policy Goal

THE NEP 2020 envisages to universalise school education (i.e. K-12 level) and significantly improve participation in higher education. It aims at universalising participation in school education with the goal of getting all children into the schooling system by 2030. It has set a target of 100 per cent GER to be achieved in school education by 2030 (NEP 2020, Section 3, Para 3.1). The policy also calls for identifying the out-of-school children and those who have dropped out, and placing them into the formal education system.

Another significant recommendation of the NEP 2020 is to substantially expand higher education by almost doubling the current participation rate in the sector by 2035. Specifically, the policy aims at expanding higher education (HE), including TVET by raising the GER to 50 per cent by 2035(NEP 2020, Section 10, Para 10.8).

In this context, it is essential to estimate and set realistic and achievable annual enrolment targets in school education (up to 2030) and higher education (up to 2035), and assess the feasibility of attaining these targets by examining the past trends in the growth of enrolment, and the required average annual growth rates of enrolment, particularly at secondary, higher secondary, and higher education levels, to attain the NEP targets. The task of projecting and setting enrolment targets in school and higher education also entails projection of population by sex in the relevant age groups up to 2036.

2.2 Challenges and Opportunities for Attaining the Policy Targets

2.2.1 *Improving Participation, Internal Efficiency and Transition Rates*

Currently, a large number of unoccupied school places are available in the country. For example, in 2017/18, 33.7 per cent of all schools in the country had enrolment ≤ 50; 57.1 per cent had enrolment ≤ 100; 71.3 per cent had enrolment ≤ 150; and 79.1 per cent had enrolment ≤ 200 (UDISE, 2017/18).

Around 40.2 per cent of all government schools had the total enrolment ≤ 50; 65.4 per cent of them had the total enrolment ≤100; 79.1 per cent had the total enrolment ≤ 150; and 85.9 per cent had enrolment ≤ 200 (UDISE 2017/18). Expanding the intake capacity of these small schools, particularly of those in the government sector, needs to be considered as a priority strategy in designing the programme interventions for concretising the NEP 2020.

A number of states have very low densities of higher education institutions, particularly states having relatively high concentration of socio-economically and disadvantaged groups (SEDGs). The small size of a large number of colleges/HEIs[1] offers a lot of opportunity to increase participation in higher education. For example, around 35 per cent of colleges, mostly found in the private sector, run a single programme; 36.1

[1] Around 16 per cent of colleges in India have enrolment less than 100 (AISHE 2018/19).

per cent of colleges have enrolment size ≤ 200; and 64.4 per cent of them have enrolment size ≤ 500; and enrolment in open and distance learning programmes constitute around 11 per cent of the total enrolment in HE (AISHE 2018/19).

With the deepening of the ICT in HE, the share of the distance learning programmes in the total enrolment in higher education can be further increased.

It is critical to generate more empirical knowledge about these issues and challenges, and keep them in view while designing related programme interventions to attain the enrolment targets set by the NEP 2020.

2.2.2 *Participation Rates (GER) in Secondary Education and Per Capita NSDP*

In this section, an effort has been made to analyse the performance of States/UTs in terms of participation in secondary and higher secondary education (combined) and higher education between two points of time, i.e., 2012/13 and 2016/17. Besides, an attempt has been made to examine the relationship between the economic capacity of States/UTs, measured in terms of per capita NSDP, and the participation rates in secondary and higher education in 2012/13 and 2016/17in scatter plots[2] (see Figures 1 & 2).

Figure 1: GER in Secondary Education (combined) and Per capita NSDP, 2012/13

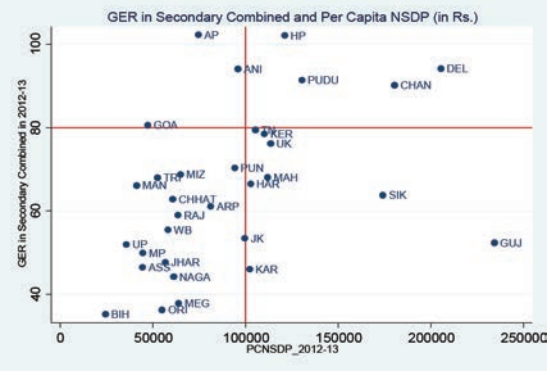
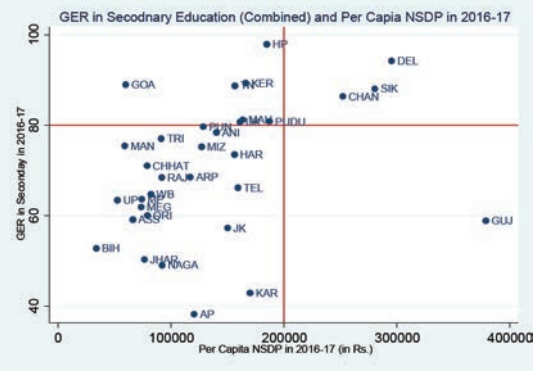


Figure 2: GER in Secondary Education (combined) and Per Capita NSDP, 2016/17



Source: Based on UDISE, AISHE and RBI data.

Given the two reference lines in place (though arbitrary), Figures 1 & 2 provide the following interesting insights about the performance of states in terms of participation in secondary and higher secondary education (combined) between 2012/13 and 2016/17:

- *States with low per capita income and low participation rates in secondary education:* Most of the economically less developed states (i.e., per capita NSDP <Rs. 1,00,000), including several NE states, i.e., Bihar, Orissa, Meghalaya, Nagaland, Assam, Jharkhand, Madhya Pradesh, Uttar Pradesh, West Bengal, Rajasthan, Arunachal Pradesh, Chhattisgarh, Manipur, Tripura, Mizoram and Punjab) had low GER in secondary education (combined)in 2012/13. The per capita NSDP and participation rates in secondary and higher secondary education in these states were still low in 2016/17 (see Figure 2).

[2] Include 32 States/UTs for which NSDP data are available. The red lines in both the scatter plots indicate the threshold levels of enrolment and per capita income. The GER in secondary education is kept as 80 per cent of combined GER at both the points of time. Hence, the X-axis scales remain the same in both Figures 1 & 2. While the per capita income threshold levels are kept as Rs. 1,00,000 in 2012/13 and Rs.2,00,000 in 2016/17 in order to capture the increase in income levels and also to capture the inflationary trends.

- *States with low per capita income and high participation rates in secondary education:* Goa, undivided Andhra Pradesh and Andaman Nicobar Islands with low per capita incomes had more than 80 per cent GER in secondary education (combined) in 2012/13. In 2016/17, states like Maharashtra, Uttarakhand, Goa, Puducherry, Tamil Nadu, Kerala and Himachal Pradesh with relatively low per capita income (<Rs. 2,00,000) had high participation rates in secondary and higher secondary education (see Figure 2).
- *States with high per capita income and low participation rates in secondary education:* States such as Karnataka, J&K, Gujarat, Haryana, Maharashtra, Sikkim, Uttarakhand, Kerala and Tamil Nadu with relatively high per capita income in 2012/13 had less than the threshold level of participation in secondary education (see Figure 1). Even with substantial increase in the per capita income in 2016/17, Karnataka, J&K and Haryana had low levels of participation in secondary education (see Figure 2). However, the performance of Maharashtra, Uttarakhand, Kerala and Tamil Nadu improved significantly in 2016/17 with more than the threshold level of GER in secondary education. Gujarat was an outlier with high per capita income and low GER in secondary education, both in 2012/13 and 2016/17.
- *States with high per capita income and high participation rates in secondary education:* Economically advanced states with secondary education participation rates above the threshold level were very few in 2012/13, i.e. Puducherry, Himachal Pradesh, Delhi and Chandigarh. In 2016/17, only Delhi, Chandigarh and Sikkim fell in this category.

Although some improvements were observed between 2012/13 and 2016/17, most of the economically less developed states continued to have low levels of participation in secondary and higher secondary education, i.e., these states are found in the first cell of the scatter plots (see Figures 1 & 2). States like Andhra Pradesh, Karnataka, Nagaland, Jharkhand, Bihar, J&K, Assam, Odisha and Gujarat have relatively low levels of participation in secondary education. With already high levels of participation in elementary education, these states provide opportunities for increasing the participation in secondary and higher secondary education. Strategies to improve participation in school education may prioritise relevant interventions in these states (states falling in the bottom two cells of the scatter plot for 2016/17).

2.2.3 *Participation Rates (GER) in Higher Education and Per Capita NSDP*

In a similar manner, this section looks into the association between participation rates in higher education and the per capita NSDP in 2012/13 and 2016/17 in two scatter plots[3] (see Figures 3 & 4).

Figure 3: GER in Higher Education and Per Capita NSDP, 2012/13

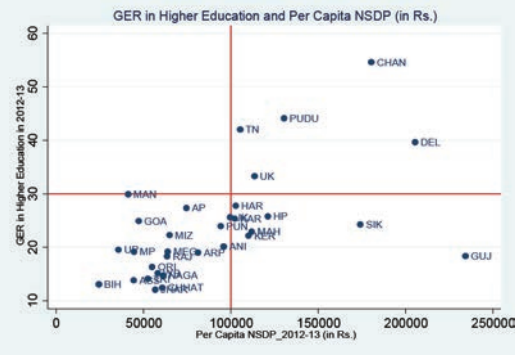
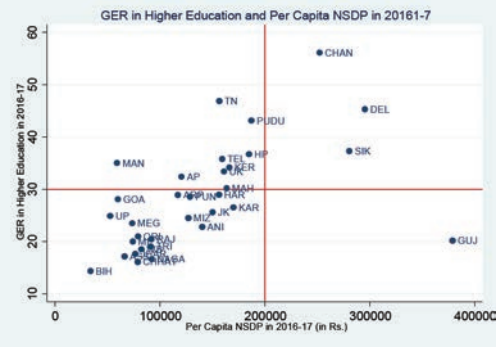


Figure 4: GER in Higher Education and Per Capita NSDP, 2016/17



Source: Based on UDISE, AISHE and RBI data.

[3]The threshold level of GER in higher education is kept as 30 per cent at both the points of time. Hence, the X-axis scales remain the same in Figures 3&4. While the per capita income threshold levels are kept as Rs. 1,00,000 in 2012-13 and Rs.2,00,000 in 2016-17 as earlier.

Given the two reference lines in place (though arbitrary), the two scatter plots shown in Figures 1&2 provide the following important insights about changes in per capita income and participation in higher education in States/UTs between 2012/13 and 2016/17:

- *States with low per capita income and low levels of participation in higher education:* Most of the economically less developed states/UTs with per capita NSDP <Rs. 1,00,000 (i.e. Bihar, Orissa, Meghalaya, Nagaland, Assam, Jharkhand, Madhya Pradesh, Uttar Pradesh, West Bengal, Rajasthan, Arunachal Pradesh, Chhattisgarh, Manipur, Tripura, Mizoram, Punjab, Manipur, Andhra Pradesh and A&N Islands) had low levels of participation in higher education in 2012/13. With marginal improvements, participation level in higher education was still low in many of these states in 2016/17 (see Figure 4). These states were concentrated in the first cell of the scatter plot for 2016/17.

- *States with low per capita income and high participation rates in higher education:* While no State/UT was falling in this category in 2012/13, several states/UTs with relatively low per capita income in 2012/13had improved GER in higher education in 2016/17. These were Maharashtra, Andhra Pradesh, Manipur, Uttarakhand, Puducherry, Tamil Nadu, Kerala, Telangana and Himachal Pradesh (see Figure 4).

- *States with high per capita income and high GER in higher education:* Uttarakhand, Tamil Nadu, Puducherry, Delhi and Chandigarh were in this category in 2012/13. In 2016/17, Sikkim joined this category of states.

- *States with high per capita income and low GER in higher education:* Karnataka, J&K, Gujarat, Haryana, Maharashtra, Sikkim, Kerala, and Himachal Pradesh were in this category in 2012/13. In 2016/17, Gujarat continued to have a very low level of participation in higher education.

There was, thus, significant improvement in the overall participation rate in higher education in the country between 2012/13 and 2016/17. However, while many States/UTs with relatively high per capita income and low GER in higher education in 2012/13 had moved to the upper left cell of the scatter plot for 2016/17, several states with low per capita income in 2012/13 had also moved to this cell in 2016/17. Nonetheless, a large number of States/UTs had less than the threshold level of participation in higher education in 2016/17.These states provide potential opportunities for improving participation in higher education in the country. Strategic interventions to achieve 50 per cent GER in higher education by 2035 may focus on these states on a priority basis.

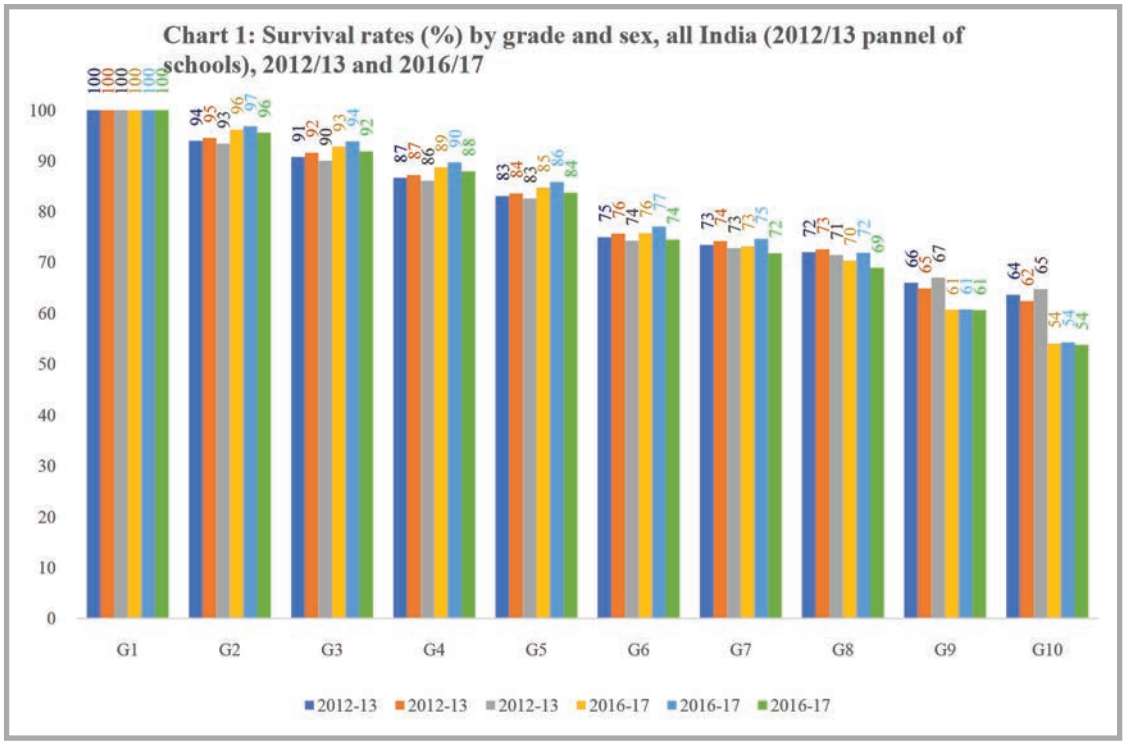
2.2.4 *Student Flow and Internal Efficiency of School Education*

Currently, the low internal efficiency of school education in the country also provides potential opportunities for improving the student flow from Grade 1 through Grade 12 for achieving the NEP 2020 target of 100 per cent GER by 2030. Perhaps, the most important strategy in the action programme for improving the participation in school education is to focus on interventions aimed at improving timely grade progression and completion rates. Analysis of student flow and internal efficiency of school education in India provides the following important insights for designing programme interventions to implement the NEP 2020.

Student progression, particularly the survival rate by grade, is a major issue in school education. The general trend is that the survival rates, both for boys and girls, decline sharply from Grade 1 through Grade 10. In fact, between 2012/13 and 2016/17, school education regressed in terms of progression of boys and girls to succeeding grades. Comparing the level of performance of school education between 2012/13 and 2016/17, it is found that there was a 10-percentage point decline in the survival rate to Grade 10 from 64 per cent in 2012/13 to 54 per cent in 2016/17 (see Chart 1). What it implies is that while around 36 per cent of the

Grade 1 cohort in 2012/13 was not likely to reach Grade 10, nearly half of the Grade 1 cohort in 2016/17 was not expected to reach Grade 10 in India, indicating substantial decline in grade progression in school education during the reference period.

An analysis of student flow in school education also reveals that the survival rate to Grade 8 stagnated between 2012/13 and 2016/17, and remained at 73 per cent level. Besides, in the 2016/17 cohort, there was not much difference between the survival rates for boys and girls up to Grade 9 and Grade 10 (see Chart 1). The grade repetition rates, both for boys and girls, too were relatively higher in Grade 9 in 2012/13 (3.6 per cent) and 2016/17 (3.9 per cent).

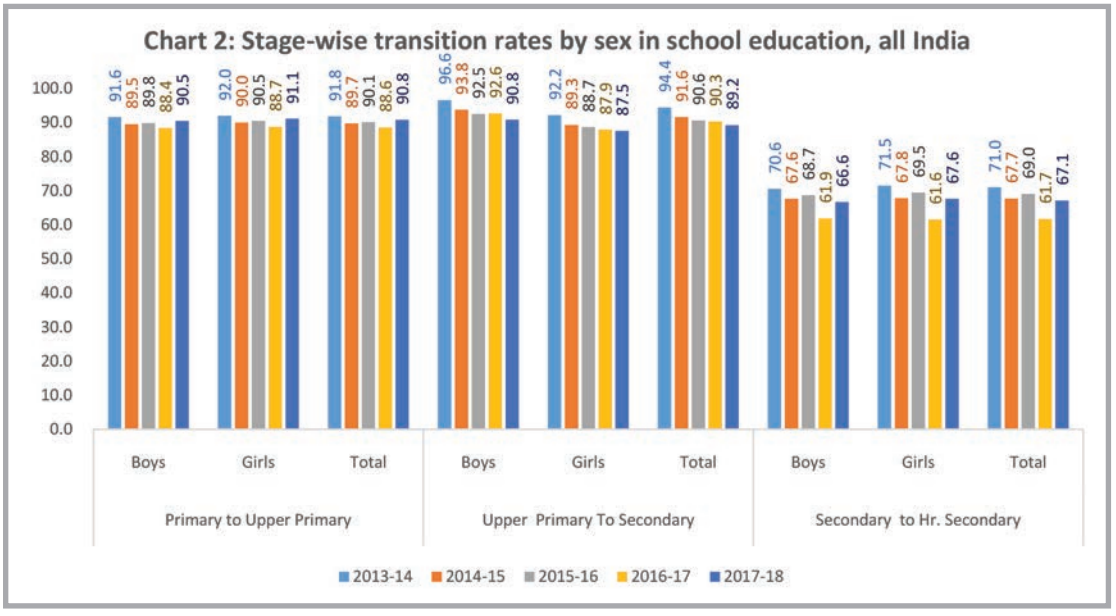


Source: Estimated using UDISE data (various years).

Transition loss by stages of school education is also another area of concern. Analysis of the transition rates by stages of school education reveals that, in 2017/18, around 10 per cent of Grade 5 students did not transit to Grade 6. Similarly, around 11 per cent of Grade 8 students did not transit to Grade 9, and around 33 per cent of Grade 10 students did not transit to Grade 11 in 2017/18. In fact, stage transition rates in school education, both for boys and girls, declined between 2013/14 and 2017/18 (see Chart 2).

The huge transition loss both at compulsory and post-compulsory levels of education continues to have adverse effect on the overall participation rates (i.e. Gross Enrolment Ratio) in school education. Programme interventions targeted to improve stage transition rates would certainly have a positive effect on the overall participation rates in school education.

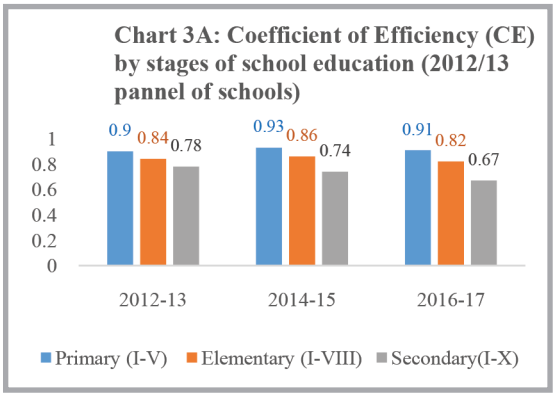
There is, therefore, an immense scope for increasing participation and enhancing the student outcomes by improving the internal efficiency of school education. Not only that the improved internal efficiency of school education would reduce huge wastages currently incurred in school education but also help improve the quality of public expenditure by making it more outcomes oriented.

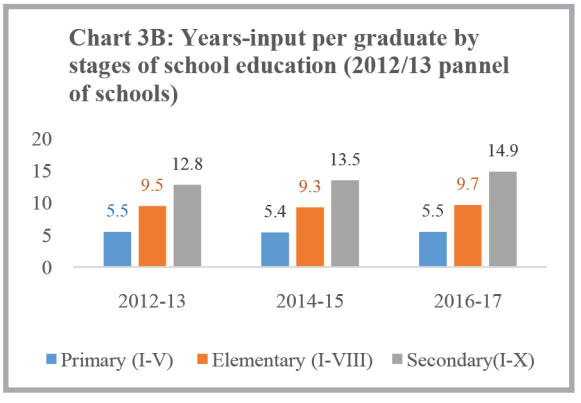


Source: Estimated using UDISE data (various years).

A look into the indicators of internal efficiency of various segments of school education reveals disturbing trends. It is important to note that the size of the key performance indicator of internal efficiency of school education (i.e. the coefficient of efficiency[4]) declined between 2012/13 and 2016/17 (see Chart 3A).

While the internal efficiency of primary education improved marginally from 90 per cent in 2012/13 to 91 per cent in 2016/17, the size of this indicator in elementary education came down from 84 per cent to 82 per cent during the reference period. The coefficient of efficiency of secondary education in India registered a sharp decline from 78 per cent in 2012/13 to 74 per cent in 2014/15, and 67 per cent in 2016/17 (see Chart 3A). This had happened because of relatively higher repetition and dropout rates as well as low transition rates at all stages of school education.





Source: Estimated using UDISE data (various years).

[4] The indicator is estimated by dividing the total ideal number of pupil years required to produce a certain number of graduates by the total number of actual pupil years taken to produce that number of graduates, at a given level of education. The Reconstructed Cohort Method (RCM) has been used to estimate the indicators of internal efficiency of school education, which uses data on grade-wise enrolment for two consecutive years and repeaters data for the latest year. Besides, RCM has been applied to assess the performance (i.e. internal efficiency) of a panel of schools in the U-DISE database from 2012/13 through 2017/18.

In 2012/13, on an average, 5.5 pupil years were taken to produce a primary level graduate, which did not improve (i.e. did not get reduced to approach 5.0 pupil years) in 2016/17. Similarly, 9.5 pupil years were taken to produce an elementary level graduate in 2012/13 (i.e. an additional one and half years over the ideal number of pupil years required to produce an upper primary level graduate), further increased to 9.7 pupil years in 2016/17. While in 2012/13, 12.8 pupil years were taken to produce a secondary level graduate, the system took 14.9 pupil years (almost one and half times the required number of pupil years) to produce a secondary level graduate (see Chart 3B). This indicates a sharp decline in the internal efficiency of school education, leading to a high level of wastage of public resources.

Low levels of internal efficiency of elementary and secondary education not only reduce the performance of the school education system but also arrest the student progression to the higher secondary level of education, a necessary condition to increase the participation in higher education. Aligning programme interventions to improve the coefficient of efficiency of school education by reducing the years-input per graduate[5] is critical for achieving the enrolment targets set in the NEP 2020 and improve the quality of public expenditure on education.

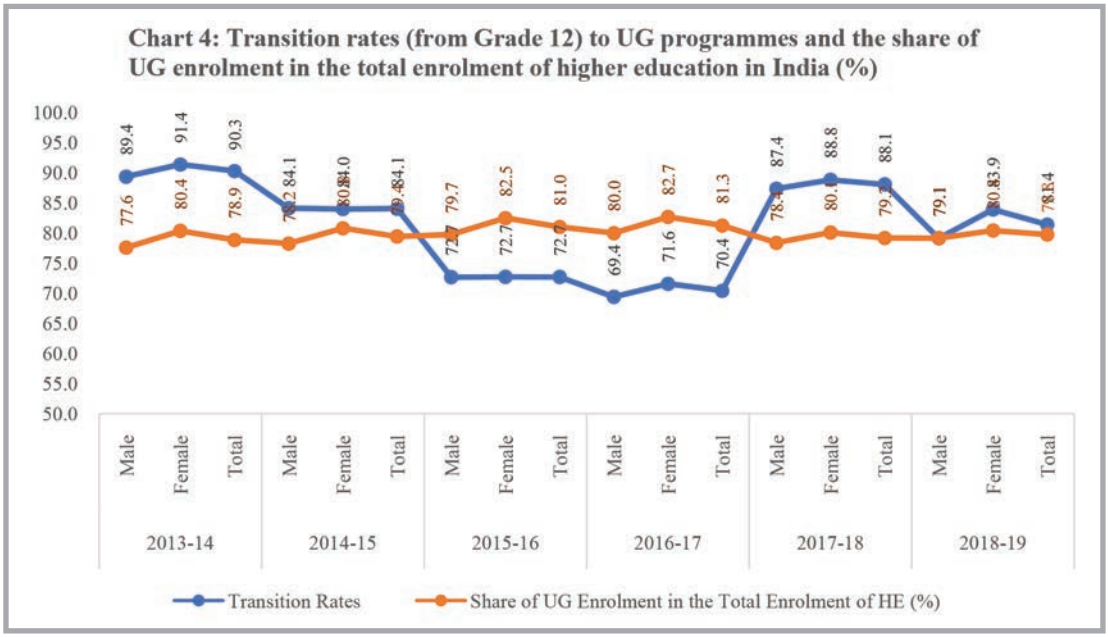
2.2.5 *Transition Rates from School Education to Higher Education*

Direct computation of the transition rates for boys and girls from Grade 12 to the first year programmes of the higher education system is not possible because of limitations in the available data. Currently, not only that programme-wise first year admission data are not available; an estimate of the lateral entry to these programmes is not available either. Given the complex structure of the higher education with options for pursuing academic programmes at various stages of higher education and the options for pursuing vocational education, including certificate and diploma courses, after completing Grade 12, disaggregated enrolment data for first year of these programmes are not available. Besides, diploma and certificate courses can be pursued after completing the UG and PG level programmes.

Given the data limitations, an attempt has been made to estimate the transition rate to higher education by taking the ratio of the average first year intake of UG programmes of a given year to the Grade 12 enrolment of the preceding year. To arrive at the first-year enrolment in UG programmes, the total enrolment in UG programmes has been divided by its general duration (i.e. 3 years). Besides, the share of UG level enrolment to the total enrolment in higher education has been estimated.

During the period from 2013/14 to 2018/19, the transition rates from school to higher education remained fairly high. The transition rates to UG programmes, both for boys and girls, show a somewhat uneven trend. The transition rates to UG programmes declined sharply during 2015/16 and 2016/17, and again, increased substantially by around 18 percentage points in 2017/18. The transition rate for girls to UG programmes was relatively higher than that of the boys during this period. The overall transition rate to UG programmes was 90.3 per cent in 2013/14, which declined marginally to 88.1 per cent in 2017/18 (see Chart 4).

[5] Years-input per graduate = Total number pupil years taken by a given cohort to complete a given level of school education/Total number of graduates of the cohort at that level of education.



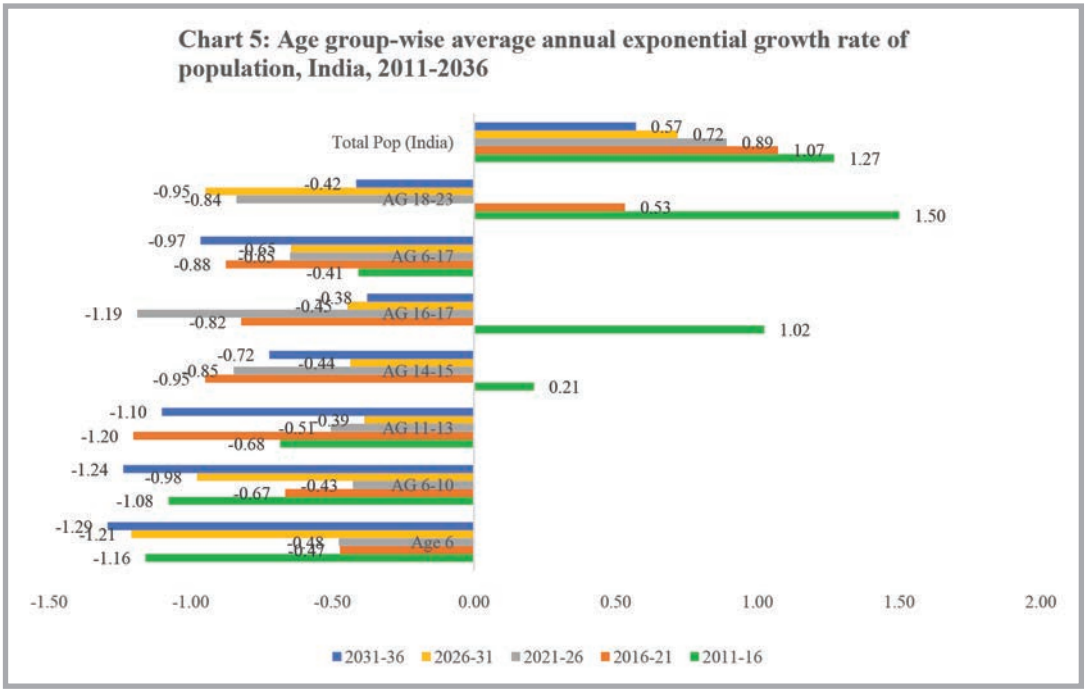
However, the share of the total enrolment in UG programmes in the total enrolment in higher education sector has more or less stagnated during the period 2013/14 to 2018/19. It registered a marginal increase from 78.9 per cent in 2013/14 to 79.8 per cent in 2018/19. Interestingly, the share of UG enrolment in the total enrolment in higher education was relatively higher during 2014/15 to 2016/17. Given the low transition rates to UG programmes during this period, the higher share of UG enrolment in the total enrolment in the higher education sector could be because of either an increase in lateral entry the UG programmes or a decline in participation in other levels of higher education.

2.2.6 *Growth of Population in School and Higher Education Age Groups*

An analysis of the growth of population in India reveals interesting trends. The demographic pyramid of India had a lower bulge with the median age being 24.9 years in 2011. In other words, nearly half of the population were below 25 years of age in 2011. According to the Report of the Technical Group on Population Projections (MoHFW, 2019), the median age is expected to rise to 34.7 years by 2036. In the coming years, fertility trends are expected to decline in India, the impact of which will be highly visible in the population below 15 years of age. It is expected that the share of population below 15 years of age would decline from 30.8 per cent in 2011 to 19.8 per cent in 2036. However, the proportion of those above 15 years of age is set to rise considerably in the coming decades. The figures projected by the Technical Group also reflect that the consequence of the declining fertility will impact the population in the school going age. Child population between 5-15 years of age will decline from 25.4 crores (20.9 per cent) in 2011 to 20.7 crores (13.65 per cent) in 2036. The population in the age group 15-24 is expected to increase from 23.3 crores in 2011 to 25.2 crores (19.3 per cent) in 2016, and then, further decline to 22.7 crores (14.9 per cent) in 2036 (MoHFW, 2019).

According to the Report of the Technical Group on Population Projection, 2019, the Average Annual Exponential Growth Rate (AAEGR) of the total population of India would decline steadily from 1.27 per cent in 2011 to 0.57 per cent in 2036 (see Chart 5). Accordingly, the total population of India is expected to increase from 1210.86 million in 2011 to 1518.29 million in 2036 (see Table A1 in Annex I).

An analysis of the behaviour of the projected population by school age groups and the age group for higher education reveals that the total population in each of these age groups is expected to register a relatively higher negative growth after 2021 (see Chart 5). While the AAEG rates of primary(6-10 years) and upper primary (11-13 years) school age population of India were negative during 2011-2021, and would continue to remain negative from 2021 through 2036, the total population in the higher education age group (18-23 years) would start declining from 2021 onwards. The secondary school age group (14-15 years) and higher secondary school age group (16-17 years) population has already started declining from 2016 onwards (see Chart 5).

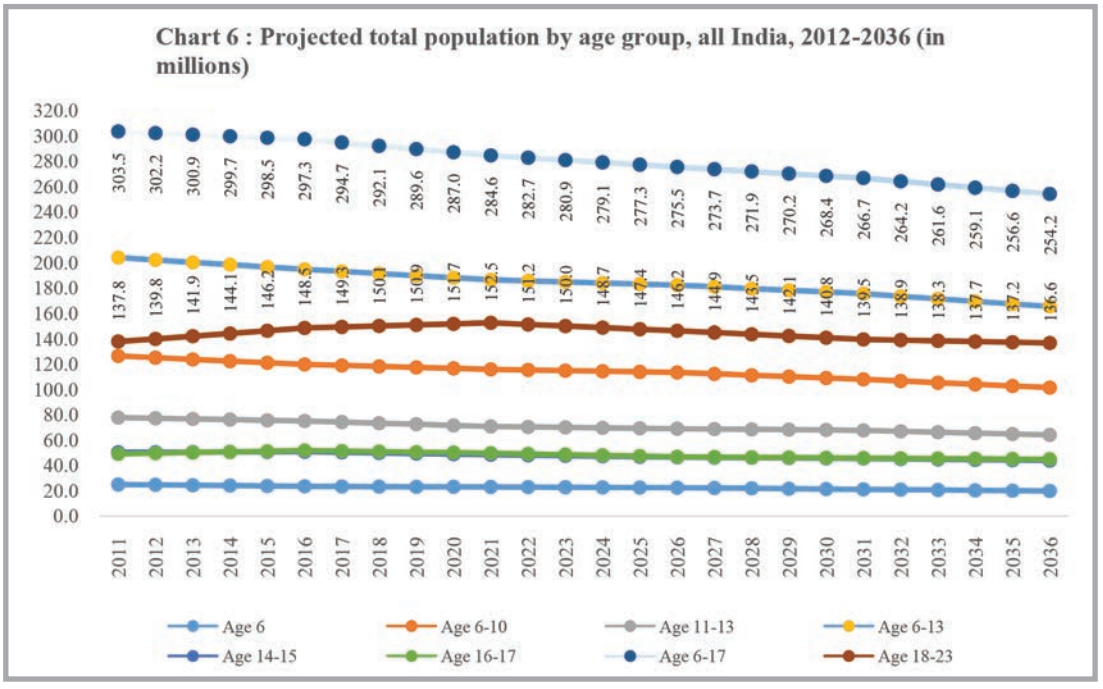


Note: Formula used for estimating Average Annual Exponential Growth Rate (AAEGR): $r = [((LN (P_n) - LN (P_0))/n] * 100$

Source: Estimated using projected population by the Technical Group on Population Projections, MoHFW, 2019.

The school age population has been declining at a relatively faster rate from 2011 to 2020, and is expected to further decline at a higher rate after 2031 (see Chart 5). In absolute terms, between 2021 and 2036, the total primary school age population is expected to decline from 126.28 million to 101.42 million; upper primary school age population from 77.71 million to 64.01 million; elementary school age population from 204.0 million to 165.42 million; secondary school age population from 50.31 million to 43.86 million; and higher secondary school age population from 49.16 million to 44.9 million. The total school age population of India (in the age group 6-17 years) is expected to decline from 303.46 million in 2011 to 284.6 million in 2021, and again to 268.44 million in 2030. The total population in this age group is expected to further decline to 254.18 million in 2036 (see Chart 6 and Table A1 in Annex I).

Similarly, the total higher education age group population (18-23 years) is expected to decline from 173.76 million in 2011 to 152.50 million in 2021, and further to 139.47 in 2031. The total population in this age group would further decline to 136.6 million in 2036 (see Chart 6 and Table A1 in Annex I).



Given the brief discussion on the internal efficiency of the school system, the transition rates to higher education, and the expected behaviour of the population in the relevant school and higher education age groups, an attempt has been made in the next two sections to build alternate scenarios of participation in school and higher education to suggest the most feasible pathways to reach the enrolment targets envisaged in the NEP 2020 by taking a pragmatic approach.

2.3 Implementation Strategies: Exploring the Most Likely Scenario of Participation

In this section, three alternative pathways (i.e. likely participation scenarios) in school education sector have been explored to suggest the achievable enrolment targets by 2030 at the all-India level, given the target of 100 per cent GER set by the NEP 2020.

Besides, the expected GER by stages of school education have been estimated in each of these scenarios from 2018 to 2036. Out of these three scenarios, the results of the most realistic scenario of participation in school education during this period would provide annual enrolment targets for programme planning, and also suggest grades/stages of school education having low promotion and transition rates for targeting programme interventions to improve the internal efficiency of school education from 2021 onwards.

However, it may be underlined that the enrolment projection exercises undertaken in this section using alternate methods keep in view the target of 100 per cent GER in school education by 2030 as envisaged in

NEP 2020, and not the goal of universal participation in school education, which requires nearly all children in the relevant age group to be in the school education system by the target year. What it means is that, theoretically, even after achieving the target of 100 per cent GER in school education by 2030, certain proportion of the relevant school age children are likely to remain out of school in 2030.

2.3.1 Setting Enrolment Targets in School Education

The most likely scenario of participation in school education in India in the coming years up to 2036 has been arrived at by exploring the following three questions:

(i) What would be the participation level (i.e. measured in terms of GER) in school education in the coming years, if the past trends in the growth of enrolment (in Grades 1-12) continue into the future, up to 2036?

(ii) What would be the required annual average compound growth rate (AACGR) of enrolment in school education, if the NEP 2020 enrolment target in school education (i.e. 100 per cent GER) is to be achieved by 2030, whatever development interventions it may require?

(iii) What would be the likely growth in enrolment in school education, if programme interventions are targeted to improve gross admission rate to Grade 1 and student progression in school education from Grade 1 through Grade 12 (i.e. internal efficiency of school education) in the coming years up to 2036?

Considering the possible development interventions in school education in the medium term and other related factors like demographic trends and educated labour market indicators, and assuming a realistic increase in the efficiency rates in school education, answers to the above-mentioned third question would, perhaps, provide the most feasible scenario of participation in school education, including improved Grade 1 entry rates, as well as performance of the school education system in terms of some of the key student outcomes like improved retention and survival rates, completion and transition rates by stages of school education, and reduction in the level of wastage due to grade repetition and dropouts.

Accordingly, the following three alternate scenarios of participation in school education from 2018 to 2036 have been developed in this section:

Scenario 1: *If the average annual exponential growth rate (AAEGR) of enrolment by grade and sex for the period 2012 to 2017 continues into the future, and the internal efficiency of school education does not improve, what would be the likely size of GER in school education (Grades 1-12) by 2030?*

Given the available enrolment data for the period 2012 to 2017 in school education (in the UDISE database), the AAEG rates (R) by grade and sex have been estimated by fitting an exponential growth function (i.e. the LOGEST growth curve) to the known enrolment data in the EXCEL programme. Thereafter, enrolment by grade and sex in school education have been projected from 2018 to 2036 by assuming the estimated R-values (average annual exponential growth rates by grade and sex) to remain the same up to 2036. Finally, GER at various stages of school education and for the school education as a whole (i.e. Grades 1-12) from 2018 to 2036 have been estimated by taking the projected enrolment by stages of school education, and dividing it by the projected population in the relevant age groups.

Further, it is important to note that, in this scenario, not only that the past trends in the exponential growth of enrolment in school education are assumed to continue into the future, but also the development interventions in the school education in the future years would be maintained at 2017 level. This implies that no additional development programmes, schemes, projects, etc, over and above the 2017 level would be launched and implemented in the school education sector. This assumption, therefore, may not hold good in the real-world situations.

Moreover, in this scenario, enrolment projections by stages of school education do not recognise the structural dependency of different stages of school education for their expansion. For example, increased student flow to the secondary stage of school education would require higher internal efficiency of elementary education, and so on. *Therefore, this scenario, which considers the past average annual exponential growth rates of enrolment to project future enrolment and estimate the likely GER by 2030 can be considered as one of the extreme scenarios of participation in school education.*

The projected enrolment and GER by stages of school education in Scenario 1 have been reported in Tables A3 and A4 in Annex I. As per Scenario 1, the projected GER in school education as a whole will increase from 87.35 in 2021 to 92.6 per cent in 2030. Whereas, the GER at the primary level would decline from 97.7 per cent to 86.9 per cent; and at the upper primary level, it would increase by around 5 percentage points from 92.9 per cent in 2021 to 97.7 per cent in 2030. At the secondary and higher secondary stages, the projected increase in the GER values are very high and unrealistic, given the declining participation rates at the primary level, and marginal improvements in participation rates in upper primary education since 2017. According to Scenario 1, the GER in secondary education is expected to increase from 76.4 per cent in 2017 to 108.1 per cent in 2030, and in higher secondary education, it is expected to increase sharply from 481 per cent in 2017 to 83.5 per cent in 2030 (see Chart 7 and Table 1).

Given the trends in participation in elementary education in the past one decade, the required number of elementary level graduates would not be available to raise the GER values in secondary education up to 108 per cent in 2030, even after assuming a 100 per cent stage transition rate from elementary level. *This scenario, therefore, is not recommended for evolving implementation strategies and development interventions to achieve the target of 100 per cent GER in school education by 2030.*

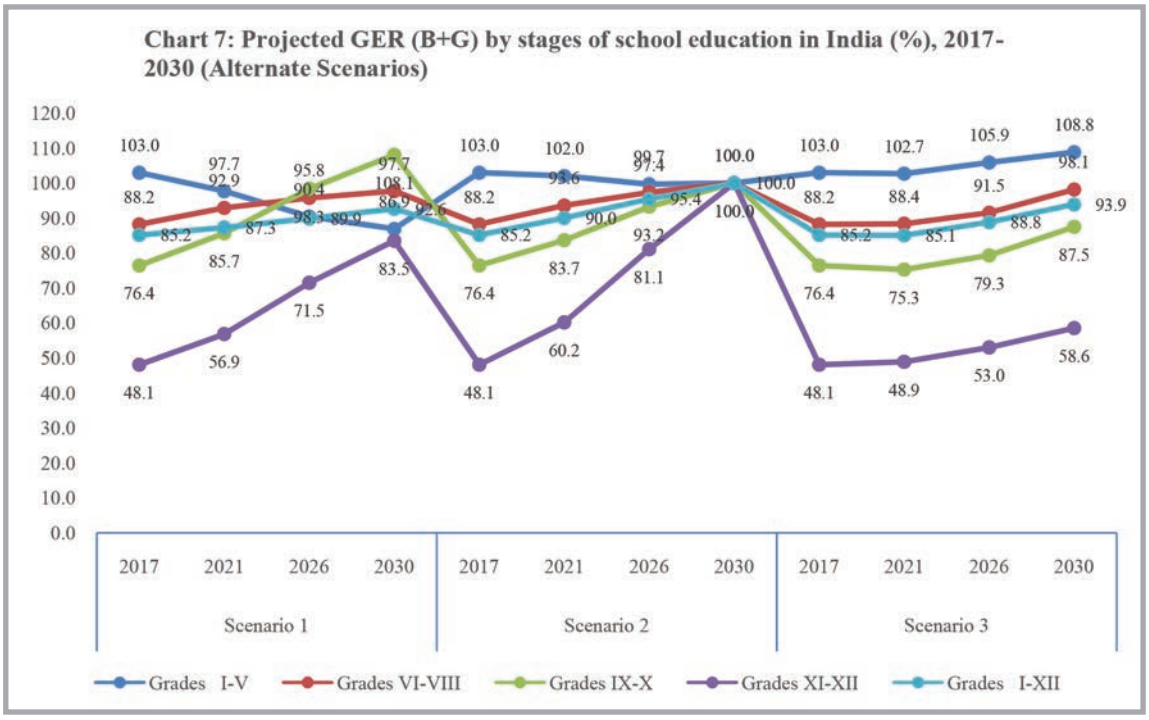
Scenario 2: *If NEP 2020 enrolment target of 100 per cent GER in school education is to be achieved by 2030, what would be the required average annual compound growth rates of enrolment by sex between the base year 2017 and target year 2030?*

In Scenario 2, the required average annual compound growth rates of enrolment in school education by grade and sex have been estimated by taking the actual enrolment in 2017 and projected relevant age group population as the required enrolment in 2030 to achieve 100 per cent GER. Thereafter, the enrolment for intermediate years between 2017 and 2030 has been projected by taking the estimated R-values (i.e. estimated required average annual compound growth rates).

In this model, the assumption is that it is possible to achieve 100 per cent GER in school education by 2030, by implementing whatever development interventions this target may require; and various stages of school

education are structurally independent of each other, thereby meaning that performance level of a given stage of school education have no impact on the expansion and performance of the succeeding stage of the school education. Like that of Scenario 1, these assumptions too are unrealistic. Scenario 2, therefore, is the other extreme pathway to reach the enrolment target of 100 per cent GER by 2030, which is unlikely to happen.

According to Scenario 2, enrolment for boys and girls is required to grow at an average annual compound growth rate of 0.63 per cent and 0.4 per cent respectively from 2017 onwards to archive 100 per cent GER in school education by 2030. The required AACGR in the total enrolment between 2017 and 2030 is 0.52 per cent during this period to achieve the GER target by 2030.



The projected enrolment and the estimated GER values by stages of school education have been reported in Tables A5 and A6 in Annex I. As per Scenario 2, the GER in school education is expected to increase from 85.2 per cent in 2017 to 95.4 per cent in 2026 and reach 100 per cent by 2030 (see Chart 7 and Table 1). It can be seen in Table 1 that, the GER values in primary and upper primary stages are required to increase at a much faster rate between 2017 and 2030 to reach the target of 100 per cent GER in school education by 2030, which is unlikely to happen. *Therefore, like Scenario 1, Scenario 2 too is not recommended for setting enrolment targets to reach the NEP 2020 target of 100 per cent GER in school education by 2030.*

TABLE 1: Projected Enrolment and GER by Stages of School Education up to 2030 (Alternate Scenarios)

Stages		Scenario 1: If past growth trends in participation continues into the future				Scenario 2: If the required AACGR is maintained from 2018 to 2030 to achieve 100 per cent GER by 2030				Scenario 3: If Gross Admission Rate to Grade 1 and Student Flow Rates through Grade 1 to Grade 12, including Transition Rates improve after 2018			
		2017	2021	2026	2030	2017	2021	2026	2030	2017	2021	2026	2030
Grades I-V	Boys	102.8	96.7	89.8	**86.9**	102.8	101.0	99.0	**100**	-	-	-	**-**
	Girls	103.1	98.8	91.0	**86.9**	103.1	103.2	100.4	**100**	-	-	-	**-**
	Total	103.0	97.7	90.4	**86.9**	103.0	102.0	99.7	**100**	103.0	102.7	105.9	**108.8**
Grades VI-VIII	Boys	87.3	92.9	94.1	**96.7**	87.3	93.9	96.3	**100**	-	-	-	**-**
	Girls	89.2	92.9	97.6	**98.8**	89.2	93.3	98.5	**100**	-	-	-	**-**
	Total	88.2	92.9	95.8	**97.7**	88.2	93.6	97.4	**100**	88.2	88.4	91.5	**98.1**
Grades IX-X	Boys	76.7	85.9	97.1	**105.2**	76.7	84.6	93.8	**100**	-	-	-	**-**
	Girls	76.1	85.4	99.7	**111.2**	76.1	82.7	92.6	**100**	-	-	-	**-**
	Total	76.4	85.7	98.3	**108.1**	76.4	83.7	93.2	**100**	76.4	75.3	79.3	**87.5**
Grades XI-XII	Boys	48.0	56.0	69.3	**77.9**	48.0	60.5	82.4	**100**	-	-	-	**-**
	Girls	48.3	57.8	73.9	**89.8**	48.3	59.8	79.7	**100**	-	-	-	**-**
	Total	48.1	56.9	71.5	**83.5**	48.1	60.2	81.1	**100**	48.1	48.9	53.0	**58.6**
Grades I-XII	Boys	84.8	86.8	88.7	**91.0**	84.8	89.9	95.3	**100**	-	-	-	**-**
	Girls	85.5	87.8	91.2	**94.5**	85.5	90.1	95.6	**100**	-	-	-	**-**
	Total	85.2	87.3	89.9	**92.6**	85.2	90.0	95.4	**100**	85.2	85.1	88.8	**93.9**

Source: Projected by building three alternative scenarios of participation in school education.

Scenario 3: *What would be the likely growth in enrolment in school education, if programme interventions are targeted to improve gross admission rate to Grade 1 and student progression in school education from Grade 1 through Grade 12 (i.e. internal efficiency of school education) in the coming years up to 2036? (Most feasible pathway)*

Given Scenarios 1 and 2 as the two extreme pathways explaining trends in the expected GER in school education from 2018 onwards, Scenario 3 has been developed as the most likely pathway to reach the enrolment target in school education by 2030 by recognising the structural dependency of various succeeding stages of school education for their expansion and performance outcomes, and the need for targeting interventions to improve student progression from Grade 1 through Grade 12, and at the same time, improving the Gross Admission Rate (GAR) to Grade 1. *This scenario adopts a pragmatic approach and suggests evidence-based intervention strategies to achieve a realistic GER target in school education by 2030.*

Scenario 3 is based on student flow analysis and assumes achievable improvements in GAR to Grade 1, grade promotion and repetition rates and stage transition rates from 2020 to 2036 to arrive at a realistic enrolment target in school education by 2030. It adopts the student flow method to project total enrolment by grade in school education from 2018 to 2036. The actual and assumed student flow rates for building Scenario 3 for projecting the most likely enrolment size in school education by 2030 have been presented in Table A8 in Annex I.

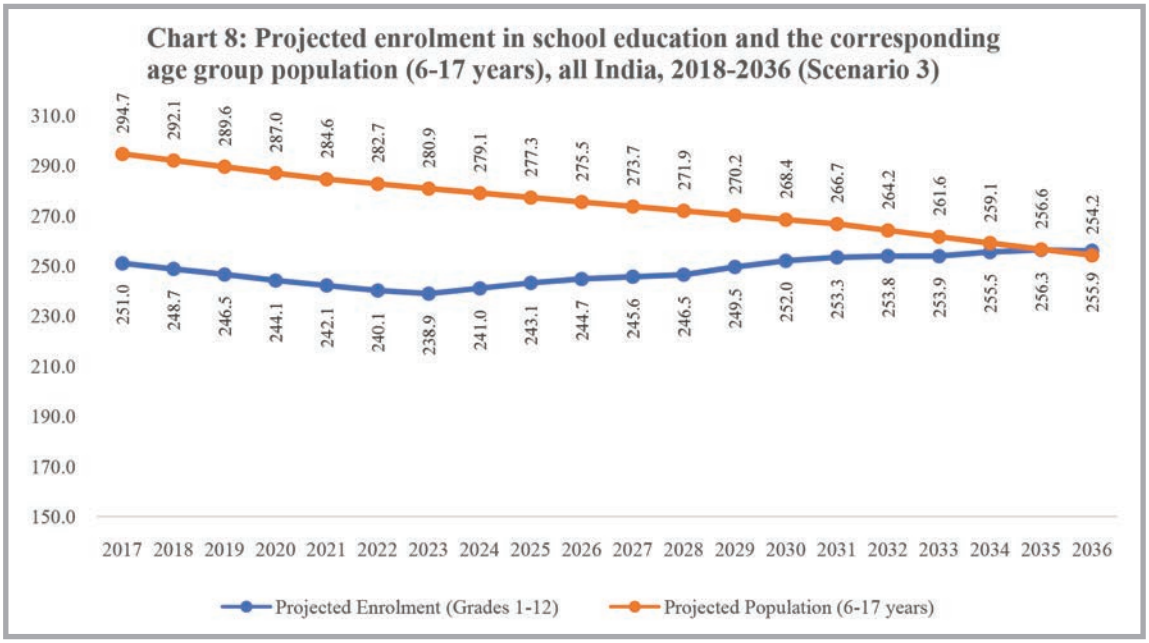
Scenario 3 assumes the following:

- Gross Admission Rate to Grade 1 increases by 2 percentage points in every period — during 2023-2027, 2028-2032, and 2033-2036;
- Grade repetition rates in school education remain the same through 2036;
- Grade promotion rates at primary and upper primary level increases by 1 percentage point during 2023-2027, half a percentage point during 2028-2032, and remains the same as that of 2032 level thereafter. Grade 2 promotion rate remains at 2027 level thereafter;
- Grade 9 permutation rate increases by 2.5 percentage points each during 2023-2027, 2028-2032, and 2033-2036;
- Transition rates from primary to upper primary stage and upper primary to secondary stage increase by 2.5 percentage points each during 2023-2027, 2028-2032, and 2033-2036; and
- Secondary to higher secondary stage transition rate increases by 2.5 percentage points each during 2023-2027, 2028-2032, and 2033-2036.

The results of the enrolment projection exercise adopting the student flow method have been reported in Table A7 in Annex I. According to Scenario 3, the projected total enrolment in school education (i.e. Grades 1-12) is likely to increase from 251 million in 2017 to 252 million in 2030 and further increase to 255.9 million in 2036 (see Chart 8).

In this scenario, the projected GER values at various stages of school education, and the school education as a whole show a consistent trend. According to Scenario 3, in 2030, the projected GER would be around 109 per cent at primary stage; around 98 per cent at upper primary stage; around 88 per cent at secondary stage; around 59 per cent at higher secondary stage; and 94 per cent in school education as a whole. Given the level of assumed internal efficiency of school education in Scenario 3, it is most likely that the target of 100 per cent GER in school education would be reached by 2035 (see Chart 8). However, further improvements in student flow rates assumed in Scenario 3 in the coming years may further improve the projected GER value in school education by 2030.

A look into the trends in the projected school age population and total enrolment in Grades 1-12 in Chart 8 show that, 100 per cent GER is likely to be achieved by 2035. In 2030, the GER in school education will be 93.9 per cent. However, even after achieving around 94 per cent GER in 2030 in school education, a reasonably large proportion of relevant age group population (at least, more than 16.4 million children in the age group 6-17 years) would remain out of school.



Student flow method for projecting enrolment is generally a preferred method as it considers the actual and the most likely performance of school education in a given country setting. *Given the realistic assumptions in Scenario 3, it is recommended that the projected enrolment and GER by stages of school education and in the school education as a whole may be considered as the most likely pathway for setting enrolment targets while designing programme interventions.*

Moreover, enrolment projection exercise in Scenario 3 also identifies the grades/stages of the school education for designing and implementing targeted interventions to improve student flow and internal efficiency of school education. The expected outcomes in terms of student flow through school education have been presented earlier in this section as assumptions of Scenario 3.

The most important message one gets from Scenario 3 is that the sustainable pathway to reach a reasonably high GER in school education by 2030 (i.e. around 94 per cent) is to prioritise improvement of internal efficiency of school education in programme design and implementation for concretising the relevant recommendations of the NEP 2020.

2.3.2 *Setting Enrolment Targets in Higher Education*

The social demand for higher education has been growing at an unparalleled rate since mid-1980s. Globalisation and demographic changes have paved the way for this growing social demand for higher education. It is influenced by the demographic trends, supply of higher secondary graduates, economic capability of pursuing college education, social and cultural factors, skills and training demand of the industry and economy, expected earnings and employment prospects of college graduates.

Equally important are the supply side factors such as low density of HEIs in certain regions of the country, mostly in less developed states; poor graduate traits and low levels of employability; most importantly, the structural dependency of the sub-systems of the education system;[6] growing size and share of the private

[6] For example, limits of expansion of higher education are largely set by the level of internal efficiency of school education and the stage transition rates.

sector; low growth in public expenditure on education; and the likely lower rate of growth of the economy in the immediate future due to COVID-19 pandemic, which would have significant impact on the level of education expenditure, more so the higher education expenditures.

As has been mentioned earlier, the increase in the participation rates in higher education largely depends on the transition rate from higher secondary stage to the first year of the higher education programmes, and also a certain level of lateral entry to these programmes. Accordingly, like in the enrolment exercise reported in Section 2.3.1, three alternative scenarios of participation in higher education have been explored in this section to recommend the most feasible and realistic enrolment growth in the coming years, up to 2036.

An attempt has been made to answer the following key questions in these three alternate enrolment projection models:

- What would be the participation level (i.e. measured in terms of GER) in higher education, if past trends in the growth of enrolment continues into the future, up to 2036 (Scenario 1)?
- What would be the required annual average compound growth (AACGR) of enrolment in higher education, if the enrolment target in higher education (i.e. 50 per cent GER) is to be achieved by 2035, by implementing whatever interventions it may require (Scenario 2)?
- What would be a realistic and achievable level of participation (GER) in higher education by 2036, if the internal efficiency of school education improves (and aligning to Scenario 3 in school education reported in Section 2.3.1), and the lateral entry to higher education increases by an accepted level due to implementation of additional development interventions in higher education in the medium term and, other related factors like flexible educated labour market, credential inflation and job competition, formalisation of the economy, education financing options, including student loans, etc. (Scenario 3)?

Scenario 1: *Estimating the GER in higher education by 2036 by extrapolating the past growth trends in participation into the future. Enrolment and GER in higher education have been projected by fitting a logistic growth curve (i.e. the enrolment from 2019 to 2036 has been projected using the average annual exponential growth rate of enrolment in higher education from 2012 to 2018)*

This scenario assumes that the past performance of higher education (from 2012 to 2018), measured in terms of increase in the participation rates, would continue into the future years. This implies that the current level of development interventions and internal efficiency of the and higher education (i.e. at 2018 level) would be maintained in the future, and there would have no significant change in the behaviour of the educated labour market in the next one and half decades. The past trends (from 2012 to 2018) in the growth of household social demand for higher education would continue up to 2036. Moreover, this scenario envisages growth of enrolment in higher education independent of the performance of school education in the reference period.

Accordingly, the average annual growth rates of enrolment during the period 2012/13 to 2018/19 have been estimated by fitting an exponential growth function (i.e. the LOGEST growth function in the EXCEL programme) to the enrolment data reported in the AISHE. The growth rates by sex thus arrived at has been used to project the enrolment in higher education up to 2036. The GER in higher education has been calculated using the projected gross enrolment and population in the age group 18-23 years.

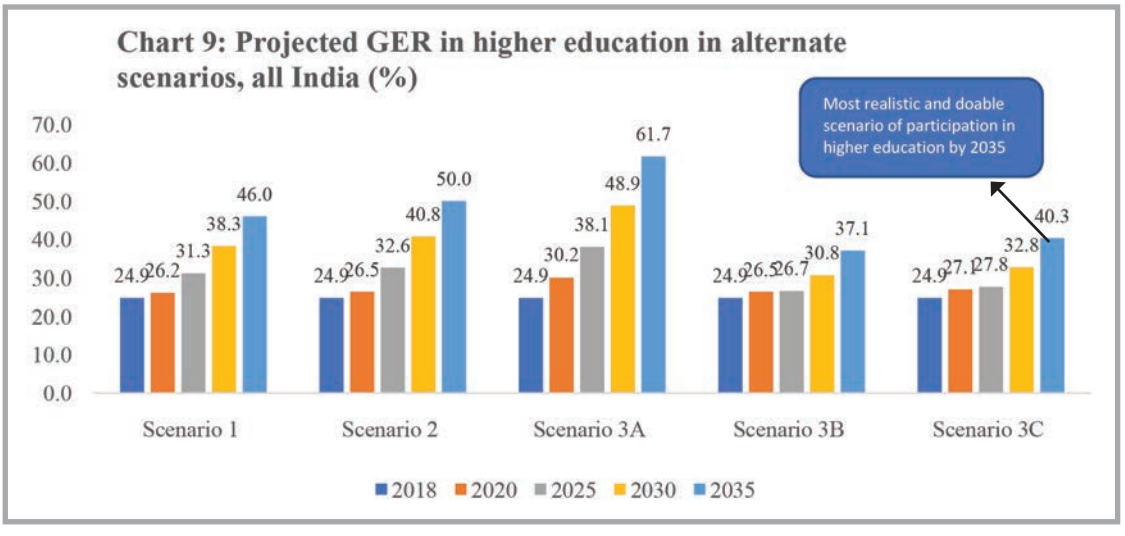
As per Scenario 1, the projected enrolment in higher education is expected to increase from 37.4 million in 2018 to 63.0 million in 2035 (see Table A9 in Annex I).The projected GER in higher education is expected to increase from 24.9 per cent in 2018 to 46 per cent in 2035 (see Table 2 and Chart 9). Scenario 1 presents one of the extreme pathways of growth of enrolment in higher education. *This scenario, therefore, is not recommended for setting enrolment targets in higher education as it assumes an average annual exponential growth of enrolment (around 2.96 per cent) independent of the performance of school education during the reference period.*

Scenario 2: *Required average annual compound growth rate (AACGR) in higher education between 2018 and 2035 to achieve 50 per cent GER in HE by 2035, whatever development interventions it may require.*

Scenario 2 considers the total enrolment in 2035 equal to 50 per cent of the total projected population in the age group 18-23 years in that year,in order to achieve the enrolment target 50 per cent GER. Thereafter, the required average annual compound growth rate has been estimated by taking the actual enrolment in 2018 (base year) and the projected total enrolment in 2035 (target year), which is equivalent to half of the projected population in the age group 18-23 in that year. The enrolment for intermediate years has been projected by taking the estimated AACGR between 2018 and 2035.

The findings of Scenario 2 have been reported in Table A9 in Annex I. As per Scenario 2, in order to achieve the target of 50 per cent GER by 2035, the total enrolment in higher education is required to grow at an average annual compound growth rate of 3.63 per cent between 2018 and 2035, which is very high and unrealistic. Accordingly, the total enrolment in higher education will be required to increase from 37.4 million in 2018 to 68.6 million in 2035 (see Table A9 in Annex I). In this scenario, the projected GER is expected to increase from 26.5 per cent in 2020 to 40.8 per cent in 2030 and finally 50 per cent in 2035 (see Chart 9).

This scenario too presents one of the extreme pathways of participation in school education in the next one and half decades, as it does not consider the performance of school education and the resulting student flow to Grade 12, the transition rates from Grade 12 to the first year of UG programmes, and even the past performance of higher education in terms of growth of enrolment. *Scenario 2, therefore, is not recommended for setting enrolment targets in higher education for programme planning.*



Scenario 3 (Variants A, B & C):	*Projected enrolment and GER in higher education, when the transition rate (between Grade 12 and first year of UG programmes) is applied to Grade 12 total enrolment projected using average annual exponential growth rate, and student flow rates in school education (improved internal efficiency), and after adjusting for lateral entry to higher education.*

Considering Scenarios 1 & 2 as two extreme pathways of participation in higher education in the next one and half decades, Scenario 3 has been developed to explore the most feasible growth path of enrolment in higher education. Further, three variants of Scenario 3 have been examined to suggest the most realistic scenario of participation in higher education. The three variants of Scenario 3 are as follows:

Scenario 3A:	*Projecting total enrolment in higher education by applying the transition rate to Grade 12 enrolment projected by fitting the LOGEST growth curve);*
Scenario 3B:	*Projecting the total enrolment in higher education by applying the transition rate to Grade 12 total enrolment projected using student flow rates (arrived at in Scenario 3 in school education and reported in Section 4.1); and*
Scenario 3C:	*Projecting the total enrolment in higher education by applying the transition rate to Grade 12 total enrolment projected using student flow rates (arrived at in Scenario 3 in school education) and adjusting for lateral entry to higher education (the most feasible scenario)*

Given the transition rates from Grade 12 to the first year of UG programmes reported in Section 2.2.4, Scenario 3A has been built by projecting Grade 12 enrolment by fitting a LOGEST grown function to available enrolment data from 2012 to 2017 in UDISE database, and then applying the transition rate to the projected total enrolment, taking the following assumptions:

- Transition rates of male (87.4 per cent) and female (88.8 per cent) to the 1st year of UG programmes remain at 2017 level up to 2036;
- Percentage share of the total UG level enrolment in the total enrolment in higher education remains at 2018 level (i.e. 79.8 per cent); and
- The growth of enrolment in higher secondary education does not depend on the performance of preceding levels of school education.

The results of Scenario 3A have been presented in Table A9 in Annex I. This model presents the most extreme scenario of participation in higher education, as it assumes an exponential growth of Grade 12 enrolment independent of the performance of school education as a whole. As per this method, the projected total enrolment in higher education would increase from37.4 million in 2018 to 84.6 million in 2035, which is very unlikely. As a result, the GER in higher education will increase from 24.9 per cent in 2018 to 61.7 per cent in 2035 (see Table 2 and Chart 9).

In Scenario 3B,the total enrolment in higher education has been projected by assuming feasible improvements in student flow rates in school education and transition rate from Grade 12 to the first year of UG programmes. It considers Grade 12 total enrolment arrived at in the most feasible scenario of participation in school education (i.e. Scenario 3 reported in Section 2.3.1) for estimating the total enrolment in the first year of UG programmes by applying the transition rates.

Scenario 3B assumes the following for projecting the total enrolment in higher education up to 2035:

- Transition rate (M+F) from Grade 12 to the 1st year of UG programmes remain in 2017 level (88.07 per cent) up to 2036;
- Percentage share of the total UG level enrolment in the total enrolment in higher education remains at 2018 level (i.e. 79.8 per cent); and
- The internal efficiency of school education changes (student flow rates improve, as assumed in Scenario 3 in school education, reported in Table A8 in Annex I), and resulting Grade 12 projected total enrolment remains the same as that of the most feasible scenario in school education.

As per this model, which assumes no improvement in transition rate from school to higher education up to 2035, the projected total enrolment in higher education is expected to increase from 37.4 million in 2018 to 50.9 million in 2035, and the GER would improve to 37.1 per cent in 2035 (see Table 2 and Chart 9).

Scenario 3C, which is the most realistic and achievable scenario of participation in higher education, assumes the following, while retaining Assumptions 2 and 3 of Scenario 3B:

- The transition rate from Grade 12 to the 1st year of UG programmes remains at 2017 level (88.07 per cent) up to 2020, and thereafter, improves to: 89 per cent during 2021-2025; 90 per cent during 2026-2030; and 91 per cent during 2031-2036; and
- On an average, the share of lateral entry to various programmes in HE, including diploma and certificate courses, UG and post-graduate and research programmes in the total enrolment of HE is assumed to be 2 per cent during 2019 and 2020; 3 per cent during 2021-2025; 4 per cent during 2026-2030; and 5 per cent during 2031-2036. It is expected that the increase in the lateral entry to HE programmes would happen because of several factors including increased labour market flexibility, formalisation of the economy, opportunities for pursuing vocational education and credentials to improve individual competitiveness (i.e. job completion) in the labour market.

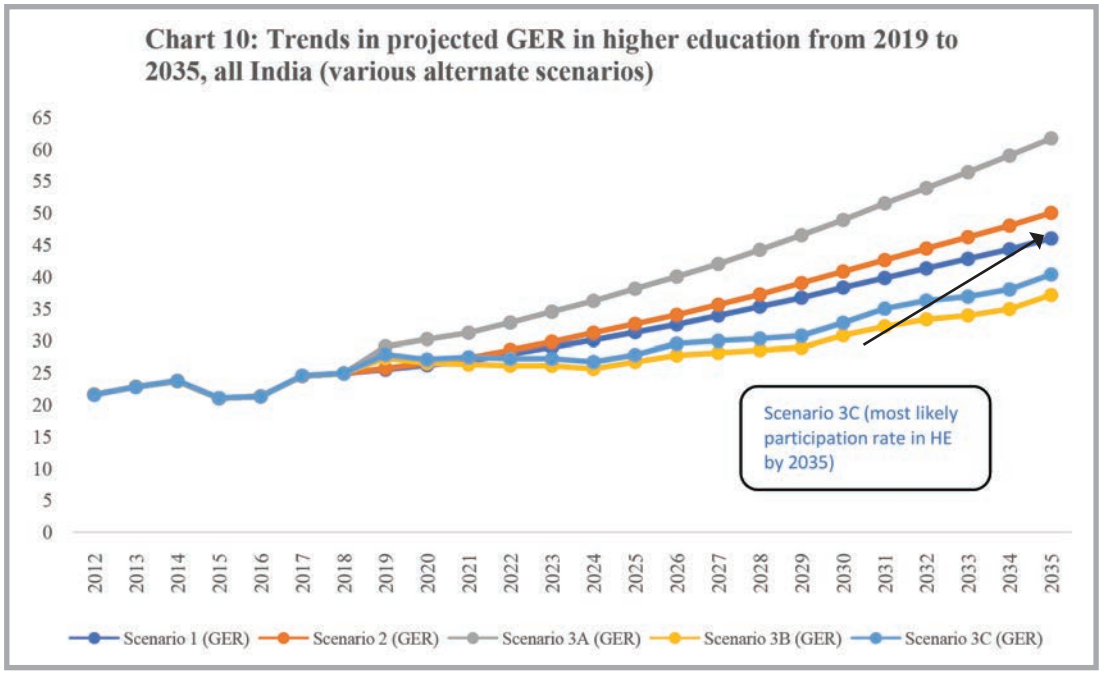
TABLE 2: Projected GER in Higher Education from 2019 to 2035 in Alternate Scenarios

Year	Scenario 1	Scenario 2	Scenario 3A	Scenario 3B	Scenario 3C*
2012	21.6	21.6	21.6	21.6	21.56
2013	22.8	22.8	22.8	22.8	22.78
2014	23.7	23.7	23.7	23.7	23.75
2015	21.0	21.0	21.0	21.0	21.04
2016	21.3	21.3	21.3	21.3	21.29
2017	24.5	24.5	24.5	24.5	24.55
2018	24.9	24.9	24.9	24.9	24.92
2019	25.5	25.7	29.1	27.3	27.83
2020	26.2	26.5	30.2	26.5	27.07
2021	26.8	27.3	31.2	26.3	27.43
2022	27.9	28.5	32.8	26.1	27.19
2023	29.0	29.8	34.5	26.1	27.19
2024	30.1	31.2	36.2	25.6	26.69

Year	Scenario 1	Scenario 2	Scenario 3A	Scenario 3B	Scenario 3C*
2025	31.3	32.6	38.1	26.7	27.78
2026	32.5	34.0	40.0	27.7	29.51
2027	33.9	35.6	42.0	28.1	29.96
2028	35.3	37.2	44.2	28.5	30.3
2029	36.7	39.0	46.5	28.9	30.75
2030	38.3	40.8	48.9	30.8	32.76
2031	39.8	42.6	51.5	32.2	34.97
2032	41.3	44.4	53.9	33.3	36.24
2033	42.8	46.2	56.4	33.9	36.86
2034	44.3	48.0	59.0	34.9	38.0
2035	46.0	50.0	61.7	37.1	40.34

Notes: For details, see Table A9 in Annex I.

* After adjusting for lateral entry to higher education.



According to Scenario 3C, the total enrolment in higher education is expected to increase from 37.4 in 2018 to 44.3 million in 2030 and 52.6 million in 2035. The GER in higher education is projected to reach 32.8 per cent in 2030 and 40.3 per cent in 2035 (see Table 2 and Chart 9). It can be seen in Chart 10 that Scenario 3C presents the most likely growth of enrolment in higher education that lies between Scenario 1 and Scenario 3B, making it the most feasible pathway of expansion of higher education in the country. With further increase in the internal efficiency of school education, transition rates from Grade 12 to the first year of UG programmes, and lateral entry to higher education, it is most likely that the GER value will be higher in 2035, and it would fall between 40-45 per cent, which is fairly close to the GER target set by NEP 2020. *Therefore, Scenario 3C may be considered as the most likely scenario of participation in higher education for setting enrolment targets up to 2035.*

2.4 Conclusions

While Scenarios 1 and 2, both in school and higher education, set forth ambitious enrolment targets, Scenario 3 in school education and Scenario 3C in higher education present realistic growth paths of participation in school education (by 2030) and higher education (by 2035) respectively. These scenarios may be considered for setting realistic enrolment targets from 2021 onwards.

It is important to note that improving student flow (survival rates by grade) and completion rates in school education (Grades 1-12) can prove to be a strategic intervention to reach the target of 100 per cent GER in school education by 2030, besides strategies aimed at mainstreaming out-of-school children in the age group 6-10 years.

The broad conclusion is that the target of 100 per cent GER in school education by 2030 set by the NEP 2020 seems achievable, provided that targeted development interventions in the programme of action are designed and implemented to improve the following:

- Gross admission rate to Grade 1, and lateral entry to subsequent grades in primary education by prioritising strategies to improve Grade 1 entry rates of boys and girls and mainstreaming out-of-school children in the age group 6-10 years;
- Improving internal efficiency of school education as a whole (Grades 1-12) by improving stage transition rates – i.e. student flow from primary to upper primary, upper primary to secondary and secondary to higher secondary;
- Improving internal efficiency of school education by improving promotion rates in all grades, with particular focus on Grade 9 promotion rate; and
- Reducing repetition rates in Grades 9 and 10.

The enrolment projection exercise in higher education also provides a promising prospect of participation. The NEP 2020 target of 50 per cent GER by 2035 is achievable, if the planned interventions in the coming years lead to significant improvements in the internal efficiency of school education, and higher transition rate from Grade 12 to the first year of UG programmes.

Structural and governance reforms in higher education, as envisaged in NEP 2020, and growth of formal sector in the economy may further stimulate household social demand for higher education. Promotion of research programmes and vocational education is also expected to have a positive impact on participation rates in higher education. If not 50 per cent GER, these changes in the economy and the education sector are expected to raise the GER in higher education close to around 45 per cent by 2035.

Moreover, as mentioned earlier in this chapter, the delivery method in the programme of action to expand both school education (particularly, secondary and higher secondary education), and higher education need to focus on economically less developed states as well as the economically most developed state Gujarat, which continue to have lower participation rates both in secondary and higher education.

ANNEX I

TABLE A1: Projected Total Population by Age Group, India (In Millions), 2012-2036

Year	Age Group								Total Pop. (India)
	6	6-10	11-13	6-13	14-15	16-17	6-17	18-23	
2011	24.91	126.28	77.71	204.00	50.31	49.16	303.46	137.76	1210.86
2012	24.62	124.92	77.18	202.10	50.41	49.66	302.17	139.82	1226.23
2013	24.33	123.57	76.65	200.23	50.52	50.17	300.91	141.92	1241.80
2014	24.05	122.24	76.13	198.37	50.62	50.68	299.68	144.05	1257.57
2015	23.77	120.93	75.61	196.53	50.73	51.20	298.46	146.21	1273.55
2016	23.51	119.66	75.10	194.76	50.84	51.74	297.34	148.49	1290.24
2017	23.39	118.86	74.20	193.05	50.36	51.31	294.73	149.27	1304.08
2018	23.28	118.06	73.30	191.37	49.88	50.89	292.14	150.05	1318.07
2019	23.17	117.28	72.42	189.70	49.41	50.47	289.58	150.85	1332.21
2020	23.06	116.50	71.55	188.05	48.94	50.06	287.04	151.66	1346.51
2021	22.96	115.74	70.72	186.46	48.49	49.66	284.60	152.50	1361.34
2022	22.85	115.25	70.36	185.60	48.07	49.07	282.74	151.22	1373.49
2023	22.74	114.75	70.00	184.75	47.67	48.48	280.90	149.95	1385.74
2024	22.63	114.26	69.64	183.91	47.26	47.91	279.07	148.69	1398.10
2025	22.52	113.77	69.29	183.07	46.86	47.34	277.26	147.45	1410.57
2026	22.42	113.30	68.95	182.25	46.47	46.79	275.51	146.24	1423.44
2027	22.14	112.19	68.68	180.87	46.27	46.58	273.72	144.85	1433.67
2028	21.88	111.09	68.42	179.51	46.07	46.37	271.94	143.48	1443.97
2029	21.61	110.00	68.15	178.16	45.87	46.16	270.18	142.12	1454.35
2030	21.35	108.93	67.89	176.82	45.67	45.96	268.44	140.77	1464.80
2031	21.10	107.89	67.63	175.52	45.47	45.76	266.75	139.47	1475.52
2032	20.83	106.56	66.88	173.44	45.14	45.58	264.17	138.89	1483.95
2033	20.56	105.24	66.15	171.38	44.81	45.41	261.61	138.31	1492.43
2034	20.29	103.93	65.42	169.35	44.49	45.24	259.09	137.73	1500.96
2035	20.03	102.65	64.70	167.35	44.17	45.07	256.59	137.16	1509.54
2036	19.78	101.42	64.01	165.42	43.86	44.90	254.18	136.60	1518.29

TABLE A2: Age-Group-Wise Projected Population by Sex, 2012-2036, All India (In Thousands)

Year	6			6-10			11-13		
	Male	Female	M+F	Male	Female	M+F	Male	Female	M+F
2012	12824	11796	24620	65186	59736	124922	40463	36717	77180
2013	12662	11673	24335	64381	59194	123575	40134	36518	76652
2014	12501	11551	24052	63586	58657	122243	39808	36319	76127
2015	12343	11430	23774	62801	58125	120926	39484	36122	75606
2016	12192	11314	23506	62050	57610	119660	39170	35929	75099
2017	12189	11205	23394	61838	57020	118858	38633	35562	74196
2018	12185	11097	23282	61627	56435	118063	38104	35199	73303
2019	12182	10990	23172	61418	55857	117275	37582	34840	72422
2020	12178	10884	23063	61210	55285	116495	37067	34484	71551
2021	12175	10782	22957	61008	54733	115741	36577	34141	70718
2022	12102	10745	22847	60761	54485	115246	36557	33799	70356
2023	12030	10708	22738	60516	54237	114753	36538	33460	69998
2024	11958	10672	22630	60271	53992	114263	36518	33125	69643
2025	11887	10635	22522	60028	53747	113775	36498	32793	69292
2026	11817	10599	22416	59788	53507	113295	36479	32473	68952
2027	11668	10477	22145	59167	53020	112186	36307	32378	68685
2028	11520	10357	21877	58552	52537	111089	36135	32284	68419
2029	11375	10238	21613	57944	52059	110003	35964	32190	68154
2030	11231	10120	21351	57342	51586	108928	35794	32096	67890
2031	11094	10007	21101	56763	51128	107891	35627	32003	67630
2032	10947	9881	20828	56039	50516	106556	35220	31665	66885
2033	10802	9757	20559	55325	49912	105237	34817	31331	66148
2034	10659	9634	20293	54619	49315	103934	34419	31001	65419
2035	10518	9513	20031	53923	48725	102648	34025	30674	64699
2036	10383	9397	19780	53257	48160	101417	33647	30359	64006

Year	6-13			14-15			16-17		
	Male	Female	M+F	Male	Female	M+F	Male	Female	M+F
2012	105649	96453	202102	26468	23943	50412	26126	23533	49659
2013	104515	95712	200226	26500	24017	50518	26374	23794	50168
2014	103393	94976	198370	26532	24092	50624	26624	24058	50681
2015	102285	94247	196532	26564	24167	50732	26876	24325	51201
2016	101220	93539	194759	26597	24244	50841	27137	24602	51739
2017	100471	92582	193053	26305	24054	50358	26876	24437	51314
2018	99731	91635	191366	26016	23865	49881	26618	24274	50892
2019	99000	90697	189697	25730	23677	49407	26363	24111	50474
2020	98278	89769	188047	25448	23491	48939	26110	23950	50059
2021	97585	88874	186459	25176	23310	48486	25865	23792	49657
2022	97319	88283	185602	24997	23077	48074	25519	23548	49066
2023	97053	87698	184751	24819	22847	47666	25177	23306	48483
2024	96789	87117	183906	24642	22619	47261	24840	23067	47907
2025	96526	86540	183066	24467	22393	46860	24507	22830	47337
2026	96267	85980	182247	24297	22175	46472	24190	22602	46792
2027	95473	85398	180871	24236	22033	46269	24195	22385	46580
2028	94687	84821	179508	24175	21892	46066	24199	22171	46370
2029	93908	84249	178157	24114	21751	45865	24204	21958	46162
2030	93136	83682	176818	24053	21612	45665	24208	21748	45956
2031	92390	83131	175521	23993	21476	45469	24213	21544	45757
2032	91259	82182	173441	23806	21335	45140	24097	21487	45584
2033	90141	81244	171385	23620	21194	44814	23982	21430	45412
2034	89038	80316	169354	23436	21055	44490	23868	21373	45241
2035	87948	79399	167347	23253	20916	44169	23754	21316	45070
2036	86904	78519	165423	23075	20781	43856	23642	21260	44902

Year			6-17			18-23		
	Female	M+F	Male	Female	M+F	Male	Female	M+F
2012	23533	49659	158243	143929	302173	72964	66861	139825
2013	23794	50168	157388	143523	300912	74183	67738	141921
2014	24058	50681	156549	143126	299675	75424	68626	144050
2015	24325	51201	155725	142739	298464	76685	69527	146212
2016	24602	51739	154954	142385	297339	78024	70469	148493
2017	24437	51314	153653	141073	294725	78366	70902	149269
2018	24274	50892	152366	139773	292138	78714	71341	150055
2019	24111	50474	151093	138485	289578	79066	71785	150851
2020	23950	50059	149835	137210	287045	79423	72235	151658
2021	23792	49657	148626	135976	284602	79799	72704	152503
2022	23548	49066	147834	134909	282743	79007	72215	151222
2023	23306	48483	147049	133851	280900	78223	71730	149952
2024	23067	47907	146271	132802	279074	77447	71248	148695
2025	22830	47337	145501	131764	277264	76680	70769	147449
2026	22602	46792	144754	130757	275511	75940	70303	146243
2027	22385	46580	143903	129816	273720	75237	69615	144852
2028	22171	46370	143061	128883	271944	74543	68933	143476
2029	21958	46162	142225	127958	270184	73857	68259	142115
2030	21748	45956	141398	127041	268439	73178	67590	140769
2031	21544	45757	140596	126151	266747	72527	66945	139472
2032	21487	45584	139162	125003	264165	72438	66449	138887
2033	21430	45412	137744	123868	261611	72349	65958	138307
2034	21373	45241	136341	122744	259085	72261	65470	137731
2035	21316	45070	134954	121632	256586	72173	64987	137160
2036	21260	44902	133621	120560	254181	72086	64517	136603

TABLE A3: Stage-Wise Projected Enrolment in School Education by Sex, 2018-2036, all India (by fitting a LOGEST Growth Curve – Scenario 1)

Year	Grades 1-5			Grades 6-8			Grades 1-8		
	Boys	Girls	B+G	Boys	Girls	B+G	Boys	Girls	B+G
2012	69607863	65176697	134784560	33259997	31666686	64926683	102867860	96843383	199711243
2013	68591577	63836863	132428440	34127226	32343993	66471219	102718803	96180856	198899659
2014	67609101	62892034	130501135	34501851	32663923	67165774	102110952	95555957	197666909
2015	66873236	62249548	129122784	34720104	32873623	67593727	101593340	95123171	196716511
2016	64244759	59563133	123807892	34006115	32073008	66079123	98250874	91636141	189887015
2017	63585551	58792849	122378400	33725064	31723158	65448222	97310615	90516007	187826622
2018	62400001	57574988	119974989	33789797	31716472	65506269	96189798	89291460	185481258
2019	61237246	56382918	117620163	33855309	31710619	65565927	95092554	88093537	183186091
2020	60096834	55216080	115312914	33921604	31705599	65627203	94018438	86921679	180940117
2021	58978325	54073929	113052254	33988687	31701413	65690100	92967012	85775342	178742354
2022	57881286	52955932	110837218	34056563	31698062	65754625	91937849	84653994	176591843
2023	56805294	51861567	108666861	34125236	31695547	65820782	90930530	83557114	174487643
2024	55749934	50790323	106540257	34194710	31693868	65888578	89944643	82484192	172428835
2025	54714798	49741702	104456500	34264990	31693028	65958018	88979788	81434730	170414518
2026	53699489	48715215	102414704	34336081	31693026	66029107	88035570	80408241	168443811
2027	52703616	47710385	100414002	34407987	31693864	66101851	87111603	79404249	166515852
2028	51726797	46726746	98453543	34480713	31695543	66176256	86207510	78422289	164629799
2029	50768657	45763841	96532497	34554264	31698064	66252327	85322921	77461904	162784825
2030	49828828	44821222	94650051	34628644	31701428	66330071	84457472	76522650	160980122
2031	48906951	43898455	92805406	34703858	31705636	66409494	83610810	75604091	159214900
2032	48002673	42995111	90997784	34779912	31710689	66490601	82782585	74705800	157488386
2033	47115649	42110773	89226422	34856810	31716589	66573399	81972459	73827363	155799822
2034	46245540	41245033	87490573	34934557	31723338	66657894	81180097	72968370	154148467
2035	45392014	40397490	85789504	35013157	31730935	66744092	80405172	72128425	152533596
2036	44554747	39567754	84122501	35092617	31739383	66831999	79647364	71307137	150954501

Year	Grades 9-10			Grades 11-12			Grades 1-12		
	Boys	Girls	B+G	Boys	Girls	B+G	Boys	Girls	**B+G**
2012	18320000	16320103	34640103	10656614	9267168	19923782	131844474	122430654	254275128
2013	19657444	17639239	37296683	11829029	10485285	22314314	134205276	124305380	258510656
2014	20121505	18180094	38301599	12440776	11061022	23501798	134673233	124797073	259470306
2015	20547350	18597702	39145052	13002117	11733280	24735397	135142807	125454153	260596960
2016	20380471	18443383	38823854	11880690	10744758	22625448	130512035	120824282	251336317
2017	20171167	18308856	38480023	12891141	11791407	24682548	130372923	120616270	250989193
2018	20526140	18695756	39221896	13270265	12253060	25523324	129986202	120240276	250226479
2019	20887364	19090901	39978265	13661110	12733602	26394712	129641028	119918040	249559068
2020	21254950	19494467	40749416	14064054	13233838	27297893	129337442	119649984	248987426
2021	21629009	19906635	41535644	14479490	13754606	28234096	129075511	119436583	248512095
2022	22009656	20327590	42337246	14907820	14296783	29204603	128855326	119278367	248133692
2023	22397007	20757521	43154528	15349463	14861281	30210744	128677000	119175916	247852916
2024	22791180	21196622	43987801	15804850	15449057	31253907	128540673	119129870	247670543
2025	23192295	21645088	44837383	16274427	16061106	32335533	128446510	119140923	247587434
2026	23600474	22103122	45703596	16758656	16698469	33457125	128394700	119209832	247604532
2027	24015843	22570929	46586772	17258012	17362234	34620245	128385458	119337412	247722870
2028	24438528	23048719	47487247	17772988	18053534	35826522	128419026	119524542	247943568
2029	24868657	23536708	48405365	18304094	18773554	37077648	128495671	119772167	248267838
2030	25306362	24035115	49341477	18851855	19523533	38375388	128615689	120081298	248696987
2031	25751777	24544164	50295941	19416815	20304762	39721578	128779402	120453017	249232419
2032	26205037	25064084	51269121	19999538	21118592	41118130	128987160	120888476	249875636
2033	26666281	25595109	52261390	20600603	21966431	42567034	129239343	121388902	250628245
2034	27135649	26137478	53273127	21220612	22849752	44070365	129536358	121955601	251491959
2035	27613285	26691436	54304721	21860186	23770094	45630280	129878643	122589955	252468598
2036	28099334	27257232	55356566	22519967	24729062	47249030	130266665	123293432	253560097

TABLE A4: Stage-Wise Projected GER in School Education
(Scenario 1: If the past trend in the growth of enrolment in school education continues into the future)

	Grade 1			Grades 1-5			Grades 6-8			Grades 1-8		
Year	Male	Female	M+F	Male	Female	M+F	Male	Female	M+F	Male	Female	M+F
2012	116.3	116.6	116.5	106.8	109.1	107.9	82.2	86.2	84.1	97.4	100.4	98.8
2013	112.0	111.2	111.6	106.5	107.8	107.2	85.0	88.6	86.7	98.3	100.5	99.3
2014	112.0	111.7	111.9	106.3	107.2	106.8	86.7	89.9	88.2	98.8	100.6	99.6
2015	114.5	114.1	114.3	106.5	107.1	106.8	87.9	91.0	89.4	99.3	100.9	100.1
2016	108.4	106.7	107.6	103.5	103.4	103.5	86.8	89.3	88.0	97.1	98.0	97.5
2017	107.8	106.6	107.2	102.8	103.1	103.0	87.3	89.2	88.2	96.9	97.8	97.3
2018	105.3	104.9	105.1	101.3	102.0	101.6	88.7	90.1	89.4	96.4	97.4	96.9
2019	102.8	103.2	103.0	99.7	100.9	100.3	90.1	91.0	90.5	96.1	97.1	96.6
2020	100.4	101.5	100.9	98.2	99.9	99.0	91.5	91.9	91.7	95.7	96.8	96.2
2021	98.1	99.8	98.9	96.7	98.8	97.7	92.9	92.9	92.9	95.3	96.5	95.9
2022	96.4	97.6	96.9	95.3	97.2	96.2	93.2	93.8	93.5	94.5	95.9	95.1
2023	94.7	95.4	95.0	93.9	95.6	94.7	93.4	94.7	94.0	93.7	95.3	94.4
2024	93.0	93.3	93.1	92.5	94.1	93.2	93.6	95.7	94.6	92.9	94.7	93.8
2025	91.3	91.2	91.3	91.1	92.5	91.8	93.9	96.6	95.2	92.2	94.1	93.1
2026	89.7	89.1	89.4	89.8	91.0	90.4	94.1	97.6	95.8	91.4	93.5	92.4
2027	88.7	87.9	88.3	89.1	90.0	89.5	94.8	97.9	96.2	91.2	93.0	92.1
2028	87.7	86.6	87.2	88.3	88.9	88.6	95.4	98.2	96.7	91.0	92.5	91.7
2029	86.8	85.3	86.1	87.6	87.9	87.8	96.1	98.5	97.2	90.9	91.9	91.4
2030	85.8	84.1	85.0	86.9	86.9	86.9	96.7	98.8	97.7	90.7	91.4	91.0
2031	84.8	82.9	83.9	86.2	85.9	86.0	97.4	99.1	98.2	90.5	90.9	90.7
2032	83.9	81.8	82.9	85.7	85.1	85.4	98.8	100.1	99.4	90.7	90.9	90.8
2033	83.1	80.7	81.9	85.2	84.4	84.8	100.1	101.2	100.6	90.9	90.9	90.9
2034	82.2	79.6	81.0	84.7	83.6	84.2	101.5	102.3	101.9	91.2	90.9	91.0
2035	81.3	78.5	80.0	84.2	82.9	83.6	102.9	103.4	103.2	91.4	90.8	91.1
2036	80.4	77.5	79.0	83.7	82.2	82.9	104.3	104.5	104.4	91.6	90.8	91.3

	Grades 9-10			Grades 11-12			Grades 1-12		
Year	Male	Female	M+F	Male	Female	M+F	Male	Female	M+F
2012	69.2	68.2	68.7	40.8	39.4	40.1	83.3	85.1	84.1
2013	74.2	73.4	73.8	44.9	44.1	44.5	85.3	86.6	85.9
2014	75.8	75.5	75.7	46.7	46.0	46.4	86.0	87.2	86.6
2015	77.3	77.0	77.2	48.4	48.2	48.3	86.8	87.9	87.3
2016	76.6	76.1	76.4	43.8	43.7	43.7	84.2	84.9	84.5
2017	76.7	76.1	76.4	48.0	48.3	48.1	84.8	85.5	85.2
2018	78.9	78.3	78.6	49.9	50.5	50.2	85.3	86.0	85.7
2019	81.2	80.6	80.9	51.8	52.8	52.3	85.8	86.6	86.2
2020	83.5	83.0	83.3	53.9	55.3	54.5	86.3	87.2	86.7
2021	85.9	85.4	85.7	56.0	57.8	56.9	86.8	87.8	87.3
2022	88.1	88.1	88.1	58.4	60.7	59.5	87.2	88.4	87.8
2023	90.2	90.9	90.5	61.0	63.8	62.3	87.5	89.0	88.2
2024	92.5	93.7	93.1	63.6	67.0	65.2	87.9	89.7	88.7
2025	94.8	96.7	95.7	66.4	70.3	68.3	88.3	90.4	89.3
2026	97.1	99.7	98.3	69.3	73.9	71.5	88.7	91.2	89.9
2027	99.1	102.4	100.7	71.3	77.6	74.3	89.2	91.9	90.5
2028	101.1	105.3	103.1	73.4	81.4	77.3	89.8	92.7	91.2
2029	103.1	108.2	105.5	75.6	85.5	80.3	90.3	93.6	91.9
2030	105.2	111.2	108.1	77.9	89.8	83.5	91.0	94.5	92.6
2031	107.3	114.3	110.6	80.2	94.2	86.8	91.6	95.5	93.4
2032	110.1	117.5	113.6	83.0	98.3	90.2	92.7	96.7	94.6
2033	112.9	120.8	116.6	85.9	102.5	93.7	93.8	98.0	95.8
2034	115.8	124.1	119.7	88.9	106.9	97.4	95.0	99.4	97.1
2035	118.8	127.6	122.9	92.0	111.5	101.2	96.2	100.8	98.4
2036	121.8	131.2	126.2	95.3	116.3	105.2	97.5	102.3	99.8

TABLE A5: Projected Enrolment by Stages of School Education, All India
(Scenario 2: On the basis of required AACGR of enrolment, if 100 per cent GER to be achieved in school education by 2030)

Year	Grades 1-5			Grades 6-8			Grades 1-8		
	Boys	Girls	B+G	Boys	Girls	B+G	Boys	Girls	B+G
2012	69607863	65176697	134784560	33259997	31666686	64926683	102867860	96843383	199711243
2013	68591577	63836863	132428440	34127226	32343993	66471219	102718803	96180856	198899659
2014	67609101	62892034	130501135	34501851	32663923	67165774	102110952	95555957	197666909
2015	66873236	62249548	129122784	34720104	32873623	67593727	101593340	95123171	196716511
2016	64244759	59563133	123807892	34006115	32073008	66079123	98250874	91636141	189887015
2017	63585551	58792849	122378400	33725064	31723158	65448222	97310615	90516007	187826622
2018	63082050	58204369	121286419	33879883	31751675	65631559	96982973	89971016	186953989
2019	62582535	57621780	120204316	34035413	31780219	65815632	96656434	89429306	186085740
2020	62086977	57045022	119131999	34191658	31808787	66000445	96330994	88890858	185221853
2021	61595342	56474038	118069379	34348619	31837382	66186001	96006651	88355652	184362303
2022	61107600	55908768	117016368	34506301	31866002	66372303	95683399	87823668	183507067
2023	60623720	55349156	115972877	34664707	31894648	66559354	95361236	87294888	182656124
2024	60143672	54795146	114938818	34823839	31923319	66747159	95040157	86769291	181809448
2025	59667425	54246681	113914106	34983703	31952017	66935720	94720160	86246859	180967018
2026	59194950	53703706	112898656	35144300	31980740	67125040	94401240	85727572	180128811
2027	58726215	53166165	111892381	35305635	32009489	67315124	94083393	85211412	179294805
2028	58261193	52634005	110895198	35467710	32038264	67505974	93766617	84698359	178464976
2029	57799852	52107172	109907025	35630529	32067064	67697594	93450908	84188396	177639303
2030	57342165	51585612	108927777	35794096	32095891	67889987	93136261	83681503	176817764
2031	56640167	50998206	107638373	35426960	31799657	67226618	92067347	82798097	174865443
2032	55946762	50417490	106364252	35063590	31506158	66569748	91010700	81924016	172934716
2033	55261847	49843385	105105232	34703947	31215367	65919314	89966180	81059163	171025344
2034	54585316	49275819	103861135	34347993	30927261	65275253	88933649	80203440	169137089
2035	53917068	48714715	102631782	33995690	30641813	64637503	87912967	79356751	167269718
2036	53257000	48160000	101417000	33647000	30359000	64006000	86904000	78519000	165423000

Year	Grades 9-10			Grades 11-12			Grades 1-12		
	Boys	Girls	B+G	Boys	Girls	B+G	Boys	Girls	B+G
2012	18320000	16320103	34640103	10656614	9267168	19923782	131844474	122430654	254275128
2013	19657444	17639239	37296683	11829029	10485285	22314314	134205276	124305380	258510656
2014	20121505	18180094	38301599	12440776	11061022	23501798	134673233	124797073	259470306
2015	20547350	18597702	39145052	13002117	11733280	24735397	135142807	125454153	260596960
2016	20380471	18443383	38823854	11880690	10744758	22625448	130512035	120824282	251336317
2017	20171167	18308856	38480023	12891141	11791407	24682548	130372923	120616270	250989193
2018	20446127	18543957	38990085	13531416	12359906	25891323	131189580	121098739	252288319
2019	20724836	18782078	39506914	14203493	12955815	27159307	132011352	121583137	253594489
2020	21007344	19023256	40030599	14908950	13580454	28489403	132838272	122069474	254907746
2021	21293702	19267531	40561233	15649445	14235208	29884654	133670372	122557755	256228127
2022	21583964	19514943	41098907	16426720	14921531	31348250	134507684	123047990	257555674
2023	21878183	19765531	41643714	17242599	15640943	32883542	135350240	123540186	258890426
2024	22176412	20019338	42195750	18099002	16395040	34494042	136198075	124034350	260232426
2025	22478707	20276403	42755110	18997941	17185494	36183435	137051221	124530492	261581712
2026	22785122	20536770	43321892	19941528	18014059	37955587	137909710	125028617	262938328
2027	23095715	20800479	43896194	20931981	18882571	39814552	138773578	125528736	264302313
2028	23410541	21067576	44478116	21971627	19792957	41764584	139642856	126030855	265673711
2029	23729658	21338101	45067759	23062911	20747235	43810146	140517580	126534982	267052562
2030	24053125	21612101	45665226	24208396	21747522	45955918	141397783	127041126	268438908
2031	23887272	21471311	45358583	24113063	21665499	45778562	140070911	125937234	266008145
2032	23722561	21331438	45054000	24018106	21583785	45601890	138756490	124842935	263599425
2033	23558987	21192477	44751464	23923522	21502379	45425901	137454404	123758144	261212547
2034	23396540	21054420	44450961	23829311	21421281	45250591	136164536	122682779	258847315
2035	23235214	20917263	44152477	23735471	21340488	45075959	134886773	121616758	256503531
2036	23075000	20781000	43856000	23642000	21260000	44902000	133621000	120560000	254181000

TABLE A6: Projected GER by Stages of School Education in India, 2018-2036 (Scenario 2: On the basis of required AACGR of enrolment, if 100 per cent GER to be achieved in school education by 2030)

	Grades 1-5			Grades 6-8			**Grades 1-8**		
Year	Male	Female	M+F	Male	Female	M+F	Male	Female	M+F
2012	106.8	109.1	107.9	82.2	86.2	84.1	97.4	100.4	98.8
2013	106.5	107.8	107.2	85.0	88.6	86.7	98.3	100.5	99.3
2014	106.3	107.2	106.8	86.7	89.9	88.2	98.8	100.6	99.6
2015	106.5	107.1	106.8	87.9	91.0	89.4	99.3	100.9	100.1
2016	103.5	103.4	103.5	86.8	89.3	88.0	97.1	98.0	97.5
2017	102.8	103.1	103.0	87.3	89.2	88.2	96.9	97.8	97.3
2018	102.4	103.1	102.7	88.9	90.2	89.5	97.2	98.2	97.7
2019	101.9	103.2	102.5	90.6	91.2	90.9	97.6	98.6	98.1
2020	101.4	103.2	102.3	92.2	92.2	92.2	98.0	99.0	98.5
2021	101.0	103.2	102.0	93.9	93.3	93.6	98.4	99.4	98.9
2022	100.6	102.6	101.5	94.4	94.3	94.3	98.3	99.5	98.9
2023	100.2	102.0	101.1	94.9	95.3	95.1	98.3	99.5	98.9
2024	99.8	101.5	100.6	95.4	96.4	95.8	98.2	99.6	98.9
2025	99.4	100.9	100.1	95.8	97.4	96.6	98.1	99.7	98.9
2026	99.0	100.4	99.7	96.3	98.5	97.4	98.1	99.7	98.8
2027	99.3	100.3	99.7	97.2	98.9	98.0	98.5	99.8	99.1
2028	99.5	100.2	99.8	98.2	99.2	98.7	99.0	99.9	99.4
2029	99.8	100.1	99.9	99.1	99.6	99.3	99.5	99.9	99.7
2030	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2031	99.8	99.7	99.8	99.4	99.4	99.4	99.7	99.6	99.6
2032	99.8	99.8	99.8	99.6	99.5	99.5	99.7	99.7	99.7
2033	99.9	99.9	99.9	99.7	99.6	99.7	99.8	99.8	99.8
2034	99.9	99.9	99.9	99.8	99.8	99.8	99.9	99.9	99.9
2035	100.0	100.0	100.0	99.9	99.9	99.9	100.0	99.9	100.0
2036	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

	Grades 9-10			Grades 11-12			Grades 1-12		
Year	Male	Female	M+F	Male	Female	M+F	Male	Female	M+F
2012	69.2	68.2	68.7	40.8	39.4	40.1	83.3	85.1	84.1
2013	74.2	73.4	73.8	44.9	44.1	44.5	85.3	86.6	85.9
2014	75.8	75.5	75.7	46.7	46.0	46.4	86.0	87.2	86.6
2015	77.3	77.0	77.2	48.4	48.2	48.3	86.8	87.9	87.3
2016	76.6	76.1	76.4	43.8	43.7	43.7	84.2	84.9	84.5
2017	76.7	76.1	76.4	48.0	48.3	48.1	84.8	85.5	85.2
2018	78.6	77.7	78.2	50.8	50.9	50.9	86.1	86.6	86.4
2019	80.5	79.3	80.0	53.9	53.7	53.8	87.4	87.8	87.6
2020	82.6	81.0	81.8	57.1	56.7	56.9	88.7	89.0	88.8
2021	84.6	82.7	83.7	60.5	59.8	60.2	89.9	90.1	90.0
2022	86.3	84.6	85.5	64.4	63.4	63.9	91.0	91.2	91.1
2023	88.2	86.5	87.4	68.5	67.1	67.8	92.0	92.3	92.2
2024	90.0	88.5	89.3	72.9	71.1	72.0	93.1	93.4	93.2
2025	91.9	90.5	91.2	77.5	75.3	76.4	94.2	94.5	94.3
2026	93.8	92.6	93.2	82.4	79.7	81.1	95.3	95.6	95.4
2027	95.3	94.4	94.9	86.5	84.4	85.5	96.4	96.7	96.6
2028	96.8	96.2	96.6	90.8	89.3	90.1	97.6	97.8	97.7
2029	98.4	98.1	98.3	95.3	94.5	94.9	98.8	98.9	98.8
2030	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2031	99.6	100.0	99.8	99.6	100.6	100.0	99.6	99.8	99.7
2032	99.7	100.0	99.8	99.7	100.5	100.0	99.7	99.9	99.8
2033	99.7	100.0	99.9	99.8	100.3	100.0	99.8	99.9	99.8
2034	99.8	100.0	99.9	99.8	100.2	100.0	99.9	100.0	99.9
2035	99.9	100.0	100.0	99.9	100.1	100.0	99.9	100.0	100.0
2036	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE A7: Projected Total Enrolment (B+G) and GER by Stages of School Education, All India, 2018-2036 (Scenario 3: On the basis of student flow rates)

	Projected Enrolment, 2018-2036						Projected GER, 2018-2036					
	Grades 1-5	Grades 6-8	Grades 1-8	Grades 9-10	Grades 11-12	Grades 1-12	Grades 1-5	Grades 6-8	Grades 1-8	Grades 9-10	Grades 11-12	Grades 1-12
2017	122378400	65448222	187826622	38480023	24682548	250989193	103.0	88.2	97.3	76.4	48.1	85.2
2018	121544824	64242816	185787640	38033746	24897285	248718671	102.9	87.6	97.1	76.2	48.9	85.1
2019	120607774	63461625	184069399	37650893	24816340	246536633	102.8	87.6	97.0	76.2	49.2	85.1
2020	119496939	62930523	182427462	37181887	24520210	244129560	102.6	88.0	97.0	76.0	49.0	85.0
2021	118848327	62486772	181335099	36491264	24282646	242109009	102.7	88.4	97.3	75.3	48.9	85.1
2022	118286059	61881571	180167630	35987086	23976314	240131029	102.6	88.0	97.1	74.9	48.9	84.9
2023	118185428	61122072	179307500	36012456	23548425	238868381	103.0	87.3	97.1	75.6	48.6	85.0
2024	119024443	61728304	180752747	36614158	23627782	240994687	104.2	88.6	98.3	77.5	49.3	86.4
2025	119617051	62412840	182029891	36725999	24378243	243134133	105.1	90.1	99.4	78.4	51.5	87.7
2026	119959084	63102230	183061314	36854596	24810964	244726874	105.9	91.5	100.4	79.3	53.0	88.8
2027	119877204	63455995	183333199	37360292	24900237	245593728	106.9	92.4	101.4	80.7	53.5	89.7
2028	119410733	64194147	183604881	37860835	24985732	246451448	107.5	93.8	102.3	82.2	53.9	90.6
2029	119110029	65522950	184632979	39111414	25763545	249507938	108.3	96.1	103.6	85.3	55.8	92.3
2030	118517510	66629309	185146819	39942546	26913602	252002967	108.8	98.1	104.7	87.5	58.6	93.9
2031	117645260	67140713	184785973	40748269	27813584	253347826	109.0	99.3	105.3	89.6	60.8	95.0
2032	116750747	66896743	183647490	41768704	28423172	253839366	109.6	100.0	105.9	92.5	62.4	96.1
2033	115734940	66876598	182611537	42263827	28992187	253867552	110.0	101.1	106.6	94.3	63.8	97.0
2034	114694078	67171963	181866041	43413932	30228019	255507992	110.4	102.7	107.4	97.6	66.8	98.6
2035	113645045	67443883	181088929	43734647	31512077	256335653	110.7	104.2	108.2	99.0	69.9	99.9
2036	112587905	67225945	179813850	43746098	32385789	255945737	111.0	105.0	108.7	99.7	72.1	100.7

TABLE A8: Actual (in 2017) and Assumed Student Flow Rates (%) for Projecting GER in School Education in India (Scenario 3)

Grade	Student Flow Rates	Base Year	Target Years			
		2017	2018-2022	2023-2027	2028-2032	2033-2036
Grade 1	Gross Admission Rate	106.45	106.45	108.45	110.45	112.45
	Repetition Rate	0.73	0.73	0.73	0.73	0.73
	Promotion Rate	96.91	96.91	97.91	98.41	98.41
	Dropout Rate	2.36	2.36	1.36	0.86	0.86
Grade 2						
	Repetition Rate	0.57	0.57	0.57	0.57	0.57
	Promotion Rate	98.02	98.02	99.02	99.02	99.02
	Dropout Rate	1.41	1.41	0.41	0.41	0.41
Grade 3						
	Repetition Rate	0.56	0.56	0.56	0.56	0.56
	Promotion Rate	96.98	96.98	97.98	98.48	98.48
	Dropout Rate	2.46	2.46	1.46	0.96	0.96
Grade 4						
	Repetition Rate	0.56	0.56	0.56	0.56	0.56
	Promotion Rate	96.67	96.67	97.67	98.17	98.17
	Dropout Rate	2.77	2.77	1.77	1.27	1.27
Grade 5						
	Repetition Rate	0.52	0.52	0.52	0.52	0.52
	Transition Rate	90.78	90.78	93.28	95.78	98.28
	Dropout Rate	8.70	8.70	6.20	3.70	1.20
Grade 6						
	Repetition Rate	0.51	0.51	0.51	0.51	0.51
	Promotion Rate	97.24	97.24	98.24	98.74	98.74
	Dropout Rate	2.25	2.25	1.25	0.75	0.75

Grade	Student Flow Rates	Base Year	Target Years			
		2017	2018-2022	2023-2027	2028-2032	2033-2036
Grade 7						
	Repetition Rate	0.48	0.48	0.48	0.48	0.48
	Promotion Rate	96.86	96.86	97.86	98.36	98.36
	Dropout Rate	2.66	2.66	1.66	1.16	1.16
Grade 8						
	Repetition Rate	0.49	0.49	0.49	0.49	0.49
	Transition Rate	89.23	89.23	91.73	94.23	96.73
	Dropout Rate	10.28	10.28	7.78	5.28	2.78
Grade 9						
	Repetition Rate	4.02	4.02	4.02	4.02	4.02
	Promotion Rate	86.72	86.72	89.22	91.72	94.22
	Dropout Rate	9.26	9.26	6.76	4.26	1.76
Grade 10						
	Repetition Rate	3.01	3.01	3.01	3.01	3.01
	Transition Rate	68.05	68.05	70.55	73.05	75.55
	Dropout Rate	28.94	28.94	26.44	23.94	21.44
Grade 11						
	Repetition Rate	1.34	1.34	1.34	1.34	1.34
	Promotion Rate	95.89	95.89	95.89	95.89	95.89
	Dropout Rate	2.77	2.77	2.77	2.77	2.77
Grade 12						
	Repetition Rate	2.07	2.07	2.07	2.07	2.07

TABLE A9: Projected Enrolment and GER in Higher Education cross Three Alternate Scenarios

	Scenario 1: By fitting a logistic growth curve		Scenario 2: Applying the required Annual AACGR to achieve 50 per cent GER by 2035/36		Scenario 3A: Applying the transition rate to the projected Grade 12 enrolment (by fitting the LOGEST growth curve)		Scenario 3B: Applying the transition rate to the projected Grade 12 enrolment using student flow method (arrived at in Scenario 3 in school education)		Scenario 3C: Applying the transition rate to the projected Grade 12 enrolment using student flow method (arrived at in Scenario 3 in school education) and adjusting for lateral entry to HE	
Year	Total Enrol-ment (000s)	GER (M+F)	Total Enrol-ment (000s)	GER (M+F)	Total Enrol-ment (000s)	GER (M+F)	Total Enrol-ment (000s)	GER (M+F)	Total Enrol-ment (000s)	GER* (M+F)
2012	30152	21.6	30152	21.6	30152	21.6	30152	21.6	30152	21.56
2013	32336	22.8	32336	22.8	32336	22.8	32336	22.8	32336	22.78
2014	34212	23.7	34212	23.7	34212	23.7	34212	23.7	34212	23.75
2015	30760	21.0	30760	21.0	30760	21.0	30760	21.0	30760	21.04
2016	31616	21.3	31616	21.3	31616	21.3	31616	21.3	31616	21.29
2017	36642	24.5	36642	24.5	36642	24.5	36642	24.5	36642	24.55
2018	37399	24.9	37399	24.9	37399	24.9	37399	24.9	37399	24.92
2019	38526	25.5	38757	25.7	43907	29.1	41145	27.3	41145	27.83
2020	39692	26.2	40163	26.5	45735	30.2	40228	26.5	40228	27.07
2021	40898	26.8	41621	27.3	47640	31.2	40148	26.3	40571	27.43
2022	42146	27.9	43132	28.5	49627	32.8	39469	26.1	39884	27.19
2023	43438	29.0	44698	29.8	51698	34.5	39133	26.1	39545	27.19
2024	44776	30.1	46321	31.2	53857	36.2	38089	25.6	38490	26.69
2025	46160	31.3	48002	32.6	56108	38.1	39321	26.7	39735	27.78
2026	47593	32.5	49745	34.0	58454	40.0	40549	27.7	41436	29.51
2027	49077	33.9	51552	35.6	60901	42.0	40771	28.1	41663	29.96
2028	50614	35.3	53424	37.2	63452	44.2	40846	28.5	41740	30.30
2029	52205	36.7	55364	39.0	66112	46.5	41047	28.9	41946	30.75
2030	53853	38.3	57374	40.8	68885	48.9	43329	30.8	44278	32.76

	Scenario 1: By fitting a logistic growth curve		Scenario 2: Applying the required Annual AACGR to achieve 50 per cent GER by 2035/36		Scenario 3A: Applying the transition rate to the projected Grade 12 enrolment (by fitting the LOGEST growth curve)		Scenario 3B: Applying the transition rate to the projected Grade 12 enrolment using student flow method (arrived at in Scenario 3 in school education)		Scenario 3C: Applying the transition rate to the projected Grade 12 enrolment using student flow method (arrived at in Scenario 3 in school education) and adjusting for lateral entry to HE	
Year	Total Enrol-ment (000s)	GER (M+F)	Total Enrol-ment (000s)	GER (M+F)	Total Enrol-ment (000s)	GER (M+F)	Total Enrol-ment (000s)	GER (M+F)	Total Enrol-ment (000s)	GER* (M+F)
2031	55560	39.8	59458	42.6	71777	51.5	44842	32.2	46332	34.97
2032	57329	41.3	61618	44.4	74793	53.9	46282	33.3	47820	36.24
2033	59161	42.8	63856	46.2	77938	56.4	46867	33.9	48425	36.86
2034	61060	44.3	66176	48.0	81217	59.0	48125	34.9	49725	38.00
2035	63027	46.0	68580	50.0	84637	61.7	50871	37.1	52561	40.34
2036	65066	47.6	-	-	88204	64.6	52374	38.3	54115	41.70

Note: *Adjusted for lateral entry to higher education.

TABLE A10: Projected Enrolment and GER by Sex in Higher Education in India, 2019 to 2036 (Scenarios 1 & 2)

Scenario 1: Projected enrolment and GER in higher education(fitting LOGEST growth function in EXCEL programme), 2019-2036									
	Enrolment in HE			Projected Population (AG 18-23)			Projected GER in HE		
Year	M	F	M+F	M	F	M+F	M	F	M+F
2012	16617294	13535123	30152417	72963809	66860739	139824548	22.8	20.2	21.6
2013	17495394	14840840	32336234	74183196	67737849	141921046	23.6	21.9	22.8
2014	18488619	15723018	34211637	75423525	68626480	144050005	24.5	22.9	23.7
2015	16539469	14220411	30759880	76685164	69526783	146211946	21.6	20.5	21.0
2016	16730737	14885387	31616124	78024000	70469000	148493000	21.4	21.1	21.3
2017	19204675	17437703	36642378	78366299	70902428	149268727	24.5	24.6	24.5
2018	19209888	18189500	37399388	78713600	71341183	150054783	24.4	25.5	24.9
2019	19571002	18955120	38526122	79065950	71785326	150851276	24.8	26.4	25.5
2020	19938905	19752965	39691870	79423395	72234917	151658312	25.1	27.3	26.2
2021	20313724	20584393	40898117	79799000	72704000	152503000	25.5	28.3	26.8
2022	20695589	21450817	42146405	79006750	72215006	151221756	26.2	29.7	27.9
2023	21084632	22353709	43438341	78222831	71729575	149952406	27.0	31.2	29.0
2024	21480988	23294606	44775594	77447151	71247679	148694829	27.7	32.7	30.1
2025	21884796	24275106	46159901	76679619	70769291	147448910	28.5	34.3	31.3
2026	22296194	25296876	47593070	75940000	70303000	146243000	29.4	36.0	32.5
2027	22715326	26361654	49076980	75237416	69614806	144852222	30.2	37.9	33.9

Scenario 1: Projected enrolment and GER in higher education(fitting LOGEST growth function in EXCEL programme), 2019-2036									
	Enrolment in HE			Projected Population (AG 18-23)			Projected GER in HE		
Year	M	F	M+F	M	F	M+F	M	F	M+F
2028	23142337	27471250	50613587	74542992	68933359	143476351	31.0	39.9	35.3
2029	23577375	28627551	52204926	73856627	68258592	142115219	31.9	41.9	36.7
2030	24020591	29832521	53853112	73178220	67590440	140768660	32.8	44.1	38.3
2031	24472139	31088211	55560349	72527000	66945000	139472000	33.7	46.4	39.8
2032	24932175	32396754	57328928	72438098	66449243	138887341	34.4	48.8	41.3
2033	25400859	33760375	59161234	72349479	65957609	138307088	35.1	51.2	42.8
2034	25878353	35181393	61059746	72261140	65470061	137731202	35.8	53.7	44.3
2035	26364824	36662223	63027047	72173082	64986564	137159646	36.5	56.4	46.0
2036	26860439	38205383	65065823	72086000	64517000	136603000	37.3	59.2	47.6
AAEGR, 201-2018	1.87984	4.20913	2.96196						

Scenario 2: Required Annual AACGR of enrolment in higher education to achieve the target of 50 per cent GER in higher education by 2035/36						
	Enrolment in HE			Projected GER in HE		
Year	M	F	M+F	M	F	M+F
2012	16617294	13535123	30152417	22.8	20.2	21.6
2013	17495394	14840840	32336234	23.6	21.9	22.8
2014	18488619	15723018	34211637	24.5	22.9	23.7
2015	16539469	14220411	30759880	21.6	20.5	21.0
2016	16730737	14885387	31616124	21.4	21.1	21.3
2017	19204675	17437703	36642378	24.5	24.6	24.5
2018	19209888	18189500	37399388	24.4	25.5	24.9
2019	19935720	18821000	38756719	25.2	26.2	25.7
2020	20688976	19474424	40163400	26.0	27.0	26.5
2021	21470694	20150534	41621228	26.9	27.7	27.3
2022	22281949	20850116	43132065	28.2	28.9	28.5
2023	23123856	21573987	44697843	29.6	30.1	29.8
2024	23997574	22322989	46320563	31.0	31.3	31.2
2025	24904305	23097995	48002299	32.5	32.6	32.6
2026	25845296	23899907	49745202	34.0	34.0	34.0
2027	26821841	24729659	51551501	35.6	35.5	35.6
2028	27835285	25588219	53423504	37.3	37.1	37.2
2029	28887021	26476587	55363608	39.1	38.8	39.0
2030	29978496	27395796	57374292	41.0	40.5	40.8
2031	31111211	28346919	59458130	42.9	42.3	42.6
2032	32286726	29331062	61617788	44.6	44.1	44.4
2033	33506656	30349373	63856029	46.3	46.0	46.2
2034	34772681	31403037	66175718	48.1	48.0	48.0
2035	36086541	32493282	68579823	50.0	50.0	50.0
2036						
AACGR, 2018-2035	3.77843	3.47178	3.63110			

CHAPTER

3

Efficient Resourcing and Effective Governance through School Complexes

CHAPTER 3

Efficient Resourcing and Effective Governance through School Complexes

3.1 Policy Goal

THE NEP 2020 recommends the establishment of the School Complex, consisting of one secondary school together with all other schools offering lower grades in its neighbourhood including Anganwadi within a radius of five to ten kilometres with the purpose of promoting resource efficiency and effective management of schools in the cluster (NEP 2020: 29). The semi-autonomous structure of School Complex can be an important governance structure of school at the local level. The establishment of School Complex can help in sharing resources and facilities within the school complex including adequate number of teachers and school functionaries/counselors in the schools. This will not only encourage teacher collaborations and form professional learning communities but also strengthen the school-community bond. Seen from the perspective of greater resource efficiency and more effective functioning, coordination, leadership, governance, and management of schools in the cluster, the policy goals of School Complexes are seen to accrue the benefits for schools in general and students in particular.

3.2 Issues and Challenges

The remote rural areas are sparsely populated and have isolated habitations and small localities/villages. The enrolment in schools in these locations is low and many of the secondary schools are poorly resourced in terms of teachers and other facilities. It is a challenge for the poorly resourced secondary schools to act as nodal school of the school complex. Therefore, unless the nodal schools in each school complex, irrespective of their student strengths, are fully resourced both with human and material resource the idea of school complex would remain limited to well-resourced locations and those locations which are closely connected to district or state headquarters.

The school complex is expected to cover all the public and private schools in its catchment area. The incentives for the private schools to be part of the governance structure of the school complex are not clear. Many private institutions may not be in a position to share their resources with others schools in the complex.

The leadership skills of the Head teacher or Principals will be an influencing factor in the creation and successful management of the school complexes. The leadership skills will decide the nature and quality of collaborations and professional networking established by the nodal school. The past experience shows that despite well-conceived idea of establishing school complexes, many states failed because of lack of understanding of the purpose and also due to absence of leadership for proper organised planning and implementation of the complexes.

3.3 Implementation Strategies

3.3.1 *Develop Criteria for Identifying the Lead Secondary/Higher Secondary Schools*

The initial step in the formation of School Complex is the identification of lead /nodal/Central school which is capable of giving directions and coordinate amongst all the feeder schools. Geographical proximity among schools facilitates functioning of the school complex. A GIS mapping of schools may be a reliable tool in the formation of a school complex. One school complex should not spread beyond the range of 5-10 km; thus including 10-15 schools that become naturally a part of the neighbourhood schools. One of the important consideration should be the availability of transportation facility between the lead school and other schools in the complex. Social and contextual proximity of the locality plays an important role. For example, the caste combinations play an important role in the local context. The school complex activities should be sensitive to the social context in which schools are located and functioning. Leadership, as mentioned above, is a challenge in the formation and effective management of a school complex. The not so successful efforts towards the establishment of school complexes across the country can be partly traced back to the poor leadership in those locations. Should leadership of a school complex be left to the default principal of secondary or higher secondary school or should there be merit based identification?

Resource Intensive or Rapport Intensive: Some of the earlier efforts, especially the Rapport Based Programme in Maharashtra, saw the nodal schools becoming coordinating units and not lead schools. In fact in Maharashtra, the poor performance of the school was one of the criteria for selecting nodal schools and senior officers from the administration volunteered to lead and adopt one of these poor performing schools. Thus, the nodal schools were neither 'lead schools' nor 'well resourced' rather ably led schools through an effort of 'rapport building' with the teachers and community. Given these experiences, it is important to choose an efficient principal as the leader of the nodal school.

An ideal school complex may be formed by at least one Secondary school and its feeder Anganwadi / pre-primary/ lower primary, upper primary and private schools. While creating the school complexes, the schools under other managements are also to be taken into account, i.e., the KVs, JNVs, Special Schools, Tribal Welfare Department managed schools, private schools etc. The schools in a complex ideally should be within 5 km radius to enable movement and participation.

3.3.2 *Specify Academic and Administrative Functions*

The school complexes are visualised as semi-autonomous units in NEP 2020, which implies the administrative powers get devolved to the nodal schools. Each school complex is envisaged to be involved in the functions of financing and budgeting, administration and management, monitoring and/or providing academic and resource support, organising professional development activities, exercises and assessment exercises for improving the quality of education and taking decisions with regards to improving classroom practices.

The DEO and the BEOs will regard the school complex as a single unit and facilitate its work. The nodal school of the complex will be empowered and the DSE will focus on aggregate level goals that need to be achieved, leading to overall system effectiveness. This will reduce the administrative time and empower the school complexes in operating the system efficiently without any administrative barriers. The school complex management committees could also register themselves as independent societies as is the case in Rajasthan thus giving financial autonomy and stability to the complexes as also raise community funds; thus functioning as semi-autonomous institutions.

The activities envisaged may also include:

- Encourage member schools to conduct holistic school assessments either through the existing tools like Shaala-Siddhi or through self-designed formats.
- Constituting teams of teachers from different schools for school visits to understand the status of challenges at individual school level.
- Analyse the data of schools in the complex and prepare a trend report of the performance of complex on different indicators like school infrastructure, cleanliness, students discipline, student's performance, innovations, etc.
- Regular monthly reviews of the implementation of the School Complex Development Plan in different schools.
- Encourage schools to prepare a School Development Plan (SDPs) with the involvement of the School Management Committee (SMCs) with the help of the SWOC analysis.
- Prioritise activities and co-create School Complex Development Plan (SCDP) for academic and physical improvement of schools in the complex. The SCDP will be developed by the Principal and teachers associated with the school complex.
- Fix the time targets and divide roles and responsibilities of members of the complex along with the schedules for review of journey towards improvement.
- Constitution of subject groups at the complex level for working in small teams to improve the teaching and learning levels in those areas.
- Intensive and regular school visits for academic supervision and feedback by team of members from the complex as also education officers from the block or district. The school complex will evolve its academic development programmes for the continuous capacity building of the teachers and also plan programme calendar for the entire year in consultation with the DIETs. The lead school will also take care of deputing the teachers to attend training programmes.

Collaborative Activities for Teachers and Students

- Organising student activities like Science Fairs, Bal Melas, Sports and Cultural Meets, Literary Fests, Mathematical Quiz etc. at complex level to encourage maximum participation of students.
- Organising demonstration lessons at the nodal school using alternate pedagogies for encouraging and improving classroom instructions.
- Organising half-day or one-day meets of subject teachers on collaborative development of lesson plans, subject-wise and grade-wise question banks, subject-wise and grade-wise activities and teaching-learning materials to smoothen the day-to-day burden of teachers and improve instructions.

Collective Accountability and Support

- Holding monthly meetings for evaluation of work done and solution of problems arising in course of work through mutual assistance and public cooperation.

- Organise at least 1-2 joint meetings of the PTAs and SMCs for sharing with them the perspective of school complex and their role and support in its development.
- Biannual sharing of school based achievement data and analysis of subject-wise, grade-wise data on achievement of students and fixing collective accountability of teachers and school leadership towards improving the learning levels in all schools.

Administrative Functions

- Some of the administrative functions that can be carried out could be grant of leave, drawing and disbursal of salaries, release of school grants and scholarships for students, maintaining accounts and conducting audits for schools etc. could be done at the school complex level thus decentralising a lot of administrative burden and reducing the time loss. This autonomy enables the head of the school complex to plan the functioning of the schools in a more creative and efficient manner. As the school complex will be encompassing a variety of institutions, there is a need for greater care to manage each of these institutions without losing focus on their development.

3.3.3 *Identify Indicators for School Complex*

The onus of making school complex functional rests on the lead school. The lead school is expected to have all the basic facilities necessary for all round development of the children. The small schools standalone primary and secondary schools with limited human and physical resources will largely depend on the adequacy of facilities in the lead school. Therefore considering the geographical proximity and ease of access, a lead school needs to be established within the radius of 5 -10 km of the nearby feeder schools. In order to ensure smooth functioning of a school complex, the table categorises areas, both academic and infrastructure, that would help in strengthening a lead school.

Areas	Indicators/Requirements
Organisation of Teaching Learning Activities	Teacher identification according to qualifications, training, guidance to the new teachers, academic discussions, development of teaching material, teaching guide, quiz and other subject competitions, evaluation, monitoring the progress of learners, teaching demonstrations, inviting resource persons in various subjects, enrichment discussions and field visits, encouragement to meritorious learners, guidance and counselling and motivation techniques etc. Computer teaching instructors, suitable physical instructor, dance and music teacher
Capacity Development of Teachers and Staff	Regular interactions and subject discussions, academic support, training, provision of supplementary learning material, interactions with experienced resource persons and experts in various subjects etc. Undertaking action researches to ascertain various academic activities of the institution, researches to understand the areas requiring improvement.
Proper Infrastructure for the Institution	(a) Proper Lecture Rooms, Lecture Equipment, Library and books, Separate laboratories for Chemistry, Physics, Biology and Home Sciences, Adequate number of scientific equipment for carrying out experiments prescribed in the curriculum, Provision of Laboratory staff for every stream, Librarian (b) LCD, Computers, Electricity back up, Internet, Wi-Fi Connectivity, cleanliness, maintenance, sufficient classrooms, tables, chairs, adequate lighting, ventilation etc. (c)Proper facilities for all the staff and faculty, adequate facilities of computers, stationary and other essential learning items. (d) Other facilities such as drinking water, toilets, security and other support to the staff with a mechanism of attending to the problems and timely maintenance of the facilities etc. (e) Facilities for indoor and outdoor sports activities (f) Music, dance, performing arts and other activities
Action Projects	Leadership Academies/SCERTs/ DIETs with active school complexes can undertake certain action projects in order to improve their functioning as well as creating a model School Complex where innovations can be implemented and tried out as well as the efficiency of the school under study can be achieved.
Identification of Need Based Training	This can enable to enhance the actual needs of the coverage area of the institution in enhancing their capabilities to serve better and fulfil the objectives of the institution.
Adopting some of the Sub-Level Institutions to Make Them Learning Models	Schools can be developed and nurtured over a period of time in order to understand the field based reality of managing such schools which in turn can enable to remove the problems faced by similar schools and to function efficiently.
Developing Focal Point for Networking among Institutions	Networking can be developed over a period of time among a chain of educational institutions in the neighbourhood in order to share some of the valuable resources like library, playground, and laboratory and faculty interaction. So that there is mutual support from each other on many academic as well as resource sharing activities.
Organising Competitions	Collectively various competitive activities can be planned among the group of schools in order to nurture competitive spirit across school complexes.

3.3.4 *Develop Guidelines for School Complex Management Committee (SCMC)*

The school complex management committee will consist of selected teachers and school heads of the schools within the clusters. The School complex HM will have the power to select the members of the SCMC. The cluster head will be the convener along with additional teacher member who will be the complex coordinator (co-convener in SCMC).

- The SCMC members may be selected based on the expertise and interest of the individual teachers, School heads, and community members who are part of individual schools. The proactive and motivated teachers and school heads can be considered for being part of the SCMC.
- Parents can be representatives within the cluster schools, ensure representation of women members, parents from the disadvantaged/weaker sections, all who are already part of the SMC of the individual schools.
- The concerned Councillor/Ward Member to ensure that all school age children are attending to and learning in school.
- The Anganwadi Worker(s) serving the schools within the complex.
- Trained and qualified Health Worker – preferably female serving the schools within the complex.
- The President of Mahila Samakhya of the concerned village/ward.
- Resource persons identified by the others in the SCMC such as educationists, alumni, retired teachers, social workers from civil society organisations/departments of Social Justice and Empowerment and government functionaries dealing with empowerment of persons with disabilities at the State and district level.

3.3.5 *Establishment of Committees under the School Complex*

Under the Chairperson and convener (complex HM), the following committees may be selected by the SCMC for the smooth functioning of the school complex:

- *Planning Committee*: The committee can engage with planning for the school complex and development of the School Complex Development Plan. This committee can have members from outside the school complex like local leaders, active community members, volunteers, and NGOs.
- *Implementation Committee*: Members to execute the roles and responsibilities assigned to each cadre and also execute additional duties during functions such as birthday functions of national leaders, science fairs, games, sports, seminars, etc.
- *Financial Committee*: To monitor financial tasks/needs.
- *Purchasing Committee*: Members to take the lowest quotation to purchase the material needed by writing a resolution. Cash Book to be maintained simultaneously.
- *Documentation Committee*: Members to write and convey the agenda of the meeting and the minutes of the meeting. Signatures of the teachers and headmasters to be taken who are present in the meeting.
- *Monitoring Committee*: The members to monitor the smooth functioning of the various activities of the school complex.

- *Assessment and Analysis Committee*: The members in this committee would collect the self-assessment reports of each school, their achievement data and prepare trend analysis of the performance of entire complex to arrive at the improvement areas for the complex.

Powers and Functions of the School Complex Management Committee

- It shall supervise the activities of the school for its smooth functioning
- It will ensure that admissions are made as per merit without discretion of gender, disability, religion, race, caste, creed and place of birth, etc., strictly as per state policy.
- It shall look into the welfare of the teachers and employees of the school.
- It shall evolve both short-term and long-term plans for the improvement of the school.
- It shall make appointment of teachers and non-teaching staff.
- It shall exercise financial powers beyond those delegated to the Principal within the budgetary provisions of the school.
- It shall take stock of academic programmes and progress of the school without jeopardising the academic freedom of Principal.
- It shall guide the Principals of individual schools in school management.
- It shall ensure that the norms given in the Acts/Rules of the State/UT regarding terms and conditions of service and other rules.
- It shall ensure that no financial irregularity is committed and no irregular procedure with regard to admission/examinations is adopted.
- It shall ensure the safety and security of children and staff of the school and give directions for improvement.
- It shall look into grievances of the teachers and staff in connection with their service conditions and pay etc. and dispose such grievances in accordance with applicable rules.
- The School Management Committee will meet at least twice in an academic session.

3.3.6 *Preparing a School Development Plan and School Complex Development Plan*

The school complex will be regarded as a semi-autonomous unit by the DSE and accordingly autonomy towards providing integrated education and practicing innovative pedagogies and curriculum while following National Curriculum Framework (NCF) and State Curricular Framework (SCF) will be encouraged. The DEO and the BEOs will regard the school complex as a single unit and facilitate its work. School will be empowered within this organisation and the DSE will focus on aggregate level goals that need to be achieved, leading to overall system effectiveness. The school individually will develop short term and long term school development plan (SDPs) with the involvement of the school management committee (SMCs). This will pave the way for development of School Complex Development Plan (SCDP). The SCDP will be developed by the Principal and teachers associated with the school complex. The SCDP will also include the plan of associated institutions such as the vocational educational institutions. The plan will include details in terms of human and material resources, innovative agendas, financial resources, teacher development

and educational outcomes. The School Development Plan (SDP) and the School Complex Development Plan (SCDP) will be the prime tool to align all stakeholders of the school, and will be used by the SMC and SCMC for setting the direction, the functioning and execution. The SCDP will be endorsed by the DSE, through its relevant official, e.g., the BEO, and will then provide the resources (financial, human, physical, etc.) necessary to achieve the long term and short term goals of the School complex development plan (SCDP) while ensuring maximum support to achieve the educational outcomes. Specific norms and framework for development of SDP and SCDP will be shared with all schools by the DSE and the SCERT.

Steps for Development of SDP

- The vision and mission of the school needs to be clearly articulated in the SDP.
- For a self-designed consorted model, the first step is to make a SWOT analysis to identify the Strength, Weakness, Opportunities and Threats. On the basis of the findings of SWOT analysis, preparation and implementation of school development planning will be done.
- Planning needs to incorporate data of the School Report card on the basis of which, the strength, weakness and opportunities need to be sorted out.
- Teams will be formed consisting of Planning team, Action team, Appraisal team and Leadership team. The roles and responsibilities of each member will be described. The priority will be given to academic improvement of the school. The plan can include awareness among parents for providing barrier free and learner friendly learning environment, tracking the children's progress, awarding the students for their learning performance and participation in curricular and other (curricular and socio-personal) activities.
- The resources and costing for each action plan needs to be sorted out.
- Monitoring and evaluation of the plan needs to be done monthly through meetings.
- Finalisation of SDP with a resolution by SMC.
- Scrutiny and consolidation of SDPs will be done at cluster level.
- The plan will be prepared involving the SCMC which includes the Cluster Coordinator, representatives of school SMC, representatives of PTA, teachers, Anganwadi workers, health workers under the leadership of the chairperson etc.

The School Development Plan may include the following components:

- Status of school on all indicators – Academic, Physical, Social and overall developmental.
- Strategy for developing Academic results and overall child development.
- Steps to ensure universal access and retention of children.
- Physical infrastructure of the school.
- Attractive and lively school environment –both physical and academic.
- Teachers' requirement: Vacancies, deployment and transfer.
- Teachers' training needs and CPD plans.

- Status of implementation of incentives such as MDM, school uniform, stipend etc. and the plan for improving these, if required.
- School sports, music and arts.
- School health intervention.
- Budget.
- Implementation plan and the timeline with major milestones.

3.3.7 *Roles of Support Institutions*

The school complex needs to be strengthened through networking with Block Resource Centres, SCERTS and DIETS and other teacher training institutes for professional growth and development of the school complexes. The roles of CRC, BRC, DIETs, SCERTs, local authorities, i.e. Panchayat/ Municipalities/other local institutions including NGOs working in the field of education who will act as support institutions needs to be highlighted:

- Review, feedback and academic support from practitioners in the field be it NGOs, CRC, BRC or DIETs will help ensure efficient teaching learning activities in schools, especially in small schools.
- Targeted programmes on multi-grade teaching for academically supporting the single teacher schools by SCERT and DIET, by engaging in on-site based teacher trainings, orientation programmes, webinars and the establishment of Professional Learning Communities (PLC).
- Monitoring and supervision role by these institutions will help ensure efficient teaching learning activities in schools, especially in small schools.
- Academic support to the single schools by SCERT and DIET, by organising need based teacher training programmes, orientation programmes, webinars, and seminars etc, establishment of teacher professional learning communities.
- Local authorities may provide other physical resource and school related equipment and facilities to reduce School Management Committees expenditure.
- Local authorities can be engaged to identify local instructors for vocational training, art education, sports, music etc.
- NGOs can be encouraged to contribute and engage with improving classroom practices by bringing varied learning experiences and exposure to teachers and students (in terms of academic empowerment, health, eco sensitiveness, social service etc.)
- CRC resources may be made available for the school complex. These CRCs may develop into Teacher Learning Centres (TLCs) for the school complex. The TLC may have books, periodicals, experimental kits, online resources, etc.
- The functioning of the BRCs and BITEs/DIETs will have to respond to the school complex system and to teacher professional development, especially by the development of teacher communities.
- The BRCs and the BITEs/DIETs may respond to fulfil the needs of the School Complex Development Plan (SCDPs) including the Teachers Development Plan, and this shall form an integral part of the short and mid-term plans of these institutions. The school complexes, BRCs and BITEs/DIETs may develop their

plans for teacher development and academic support collaboratively and consultatively; this must be facilitated by the DEOs and the SCERT.

- The local Panchayat/Ward Council should track, support and advocate (with DSE, Zilla Parishad, Collector and local MLA) for the School Complex Management Committee, including for adequate resourcing of all schools in their area of jurisdiction.
- The assessment and evaluation of performance of BEOs and DEOs will take into account systematic feedback from SCMCs in their geographical locations.

3.3.8 *School Complex Leadership Development*

Realising the vision of School Complexes to a large extent is dependent on the leadership of the complex. There have been experiences of the past that support this argument that states, districts and complexes that had inspiring and committed leadership could successfully transform the schools in the complex; even the Sahodaya complexes that succeeded were largely due to the leadership at the complex. Thus merit based selection of leaders and their induction into the new roles and capacity building, is meant to lead multiple schools, in fact, to lead education in the given geographical context by understanding its socio-cultural and educational needs.

CHAPTER

4

Equity, Diversity and Inclusion in School and Higher Education

CHAPTER 4

Equity, Diversity and Inclusion in School and Higher Education

Part I: School Education

4.1 Policy Goal

THE 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 school education. The NEP 2020 considers equity as an inclusive notion and embraces diversity by focussing on socially and economically disadvantaged groups and areas (NEP 2020, 24-25).The socio-economically disadvantaged groups (SEDGs) include the groups such as Scheduled Castes, Scheduled Tribes, OBCs, minorities, girls, children with disabilities.

4.2 Issues and Challenges

Despite steady educational progress over the decades since Independence, inequalities in access to educational opportunities still remain. The socio-economically disadvantaged groups (SEDGs) have been lagging behind other groups in terms of access and participation.

According to School Education Quality Index by NITI Aayog, most States and the Union Territories reported an NER of more than 90 per cent. In fact, the share of out-of-school children has been declining and the transition rate from Primary to Upper-Primary Level and the transition rate from Upper-Primary to Secondary Level has been improving in most states. Despite these positive indicators inter-state variations on these variables at the secondary level continue to be high. Muslims have the maximum proportion of out of school children in India (4.43 per cent), followed by Hindus (2.73 per cent), Christians (1.52 per cent) and others (1.26 per cent).

As compared to the national average of 90 per cent, Jammu & Kashmir reported the lowest adjusted NERs at the elementary level of 67.3 per cent. (NITI Aayog, 2019). The national level adjusted NER at the secondary level was (80 per cent) and only seven States and UTs in India reported an adjusted NER greater than 80.0 per cent. In some of the states such as Sikkim, Nagaland and Jharkhand, the adjusted NERs was as low as 22.1, 35.8 and 46.3 per cent respectively. Further, Jharkhand and Bihar also witnessed low transition rate from primary to upper-primary level and from upper-primary to secondary level. Similarly, the transition rate from primary to upper-primary level in Uttar Pradesh (77.9) also continued to be below the national average.

Not only the inter-state but also the intra-state variations are large in some states, especially those with larger proportions of the SEDGs. The NEP-2020 recommends declaring these regions with large populations from the SEDGs as Special Education Zones (SEZs) where all the schemes and policies are implemented more effectively.

Such efforts were made in the past also. For example, the districts with high concentration of population of SCs, STs and Muslims were identified as Special Focus Districts (SFDs) under the SSA.

Further, 3479 blocks have been identified as educationally backward blocks (EBBs) where the level of Female Literacy Rate is below the national average of 46.13 per cent and Gender Gap in Literacy is above the national average of 21.59 per cent.

The social group disparities are becoming more evident at higher levels of education. According to UDISE 2016/17 data, the share of SC children at primary level is about 19.6 per cent; however, their share declines to 17.3 per cent at the higher secondary level. The corresponding decline in the share of enrolment among the Scheduled Tribe students is from 10.6 per cent to 6.8 per cent and for differently-abled children from 1.1 per cent to 0.25 per cent. In all these categories women are more affected and they show more decline than boys.

While opportunities in terms of access and participation have improved, the learning crisis especially among children from the disadvantaged groups continue to be serious. Most children in schools are not learning what they are supposed to learn. This results in a learning crisis and a growing learning deficit. The learning crisis in India has three dimensions: low levels of learning, high inequality in learning levels among students and slow progress towards narrowing down the learning gaps among students belonging to different social groups.

Lower levels of learning amongst disadvantaged groups and poor progress to narrow down the gaps in learning outcomes contribute to a growing gap in learning outcomes between the SEDGs and others. The slow progress in student learning may also have been compounded by the non-detention policy whereby all students, irrespective of their learning levels, are permitted to transit from one grade to the next higher grade. The cumulative learning deficits lead to low stage transitions, drop-outs and become a constraining factor to pursue education beyond the compulsory level.

Low enrolment rates in lower secondary level education/access to under-resourced schools/non-academic tracking: The cumulative learning deficits at the preceding levels of education indicate that many children are unable to move on to upper/higher secondary education with inequalities in participation leading to wide gaps in learning outcomes.

Even when they do participate, students from SEDGs are disproportionately placed in non-academically oriented streams that make them ineligible to qualify for higher education. Students from SEDGs are more likely to attend under-resourced high schools, study in regional language as medium of instruction and are exposed to outdated high school curriculum that results in lower levels of academic preparation for college. In addition, they are less likely to receive college counselling both from their parents and their school.

4.3 Implementation Strategies for School Education

Suitable implementation strategies will be deployed to address the problems of access, participation and learning outcomes for the socio-economically disadvantaged groups (SEDGs) and to eliminate different types of disparities (both groups and areas specific) in school education.

4.3.1 *Strategies for Overcoming Regional Disparities*

- Declaring the regions of the country with large populations from educationally-disadvantaged SEDGs as Special Education Zones (SEZs), where all the schemes and policies are implemented to the maximum through additional concerted efforts, in order to truly change their educational landscape.

- Targeting strategies such as, ECCE, foundational literacy and numeracy, access, enrolment and attendance, in a concerted way for the SEDGs.
- Targeting scholarships, conditional cash transfers to incentivise parents to send their children to school, providing bicycles for transport, etc.
- Free boarding facilities will be built, matching the standard of Jawahar Navodaya Vidyalaya, in school locations.
- Additional Jawahar Navodaya Vidyalayas and Kendriya Vidyalayas will be built around the country, especially in the aspirational districts, Special Education Zones, and other disadvantaged areas, to increase high-quality educational opportunities.
- Pre-school sections covering at least one year of early childhood care and education will be added to Kendriya Vidyalayas and other primary schools around the nation, particularly in disadvantaged areas.
- A single agency and website through 'single window system' for providing scholarships and other opportunities to SEDGs.

4.3.2 *Strategies for Gender Disparities*

- Setting up a 'Gender-Inclusion Fund' to implement priorities determined by the Central Government is critical for assisting female and transgender children in gaining access to education (such as the provisions of sanitation and toilets, bicycles, conditional cash transfers, etc).
- Providing bicycles and organising cycling and walking groups to provide access to school have been shown to be particularly powerful methods in increasing participation of female students;
- Kasturba Gandhi Balika Vidyalaya will be strengthened and expanded to increase the participation in quality schools (up to Grade 12) of girls from socio-economically disadvantaged backgrounds.

4.3.3 *Strategies for Social Group Disparities*

- Special attention to Scheduled Castes and Scheduled Tribes — special hostels in dedicated regions, bridge courses, and financial assistance through fee waivers — to facilitate their entry into higher education.
- Besides continuing the existing programmes and schemes, special mechanisms need to be made to ensure that children belonging to tribal communities receive the benefits of these interventions.
- Encouraging opening NCC wings in their secondary and higher secondary schools, including those located in tribal dominated areas — aspire to a successful career in the defence forces.
- Bridging these gaps in access, participation, and learning outcomes of children belonging to Scheduled Castes will continue to be one of the major goals.

4.3.4 *Strategies for Minorities*

- Interventions to promote education of children belonging to all minority communities who are educationally underrepresented.
- Upgrading Madrasas to schools.

- Training of teachers in Madrasas.
- Extending incentives (uniform, Gender Inclusion Funds) to Madrasas.

4.3.5 *Inclusion of Children with Disabilities (CwD)*

- In school education, the interventions and strategies for the Children with Disabilities or Divyang will be as per the Rights of Persons with Disabilities (RPWD) Act2016. As per the RPWD Act, children with benchmark disabilities will have the choice of regular or special schooling.
- Barrier free access for all children with disabilities will be enabled as per the RPWD Act. In particular, assistive devices and appropriate technology-based tools, as well as adequate and language-appropriate teaching-learning materials.
- Home-based education will continue to be a choice available for children with severe and profound disabilities who are unable to go to schools. Technology-based solutions will be used for the orientation of parents/caregivers along with wide-scale dissemination of learning materials to enable parents/caregivers.
- The schools/school complexes will be provided resources for the integration of children with disabilities, recruitment of special educators with cross-disability training, and for the establishment of resource centres, wherever needed, especially for children with severe or multiple disabilities.
- The education of CwDs can be better addressed in school complexes instead of standalone educational institution. A complex offers alternatives for physical access. Also due to large student population, it is better equipped in terms of human resources as well as learning devices. It may prove to be more cost effective because cost of devices gets distributed among the many users. That was not possible in standalone institutions.
- It also offers possibility of peer learning and collaborative learning opportunities, which is required for inclusive education. Further, due to greater numbers of students and teachers, there are more chances of sharing expertise with each other. In fact, school complexes may prove supportive in realisation of the goal of inclusive education.
- One-on-one teachers and tutors, peer tutoring, open schooling, appropriate infrastructure, and suitable technological interventions to ensure access can be particularly effective for certain children with disabilities.
- With regard to learning disabilities, teachers will engage with early identification of learning disabilities and plan specifically for their mitigation with flexible curricula to leverage each child's strengths. Based on the Guidelines provided by the National Assessment Centre (PARAKH), assessments will be conducted to ensure equitable access and opportunities for all students with learning disabilities.
- Inclusion and equity will become a key aspect of teacher education (and training for all leadership, administrative, and other positions in schools). Sensitisation programmes will be designed for the teachers, principals, administrators, counsellors, and students to the requirements of all students, the notions of inclusion and equity — responsible towards its most vulnerable citizens.
- There is a need to make the school curriculum inclusive by removing biases and stereotypes in school textbooks.

- Each school should prepare a perspective academic plan (PAP) for every academic year. And the PAP should be in tune with the learning requirements of diverse students and remedial measures for those who are not performing well.
- Irrespective of their academic grades score, each student to get an opportunity to develop their language competency. This will help in boosting their confidence level.
- It will be important to provide guidance services to prepare students from the SEDGs with knowledge and skills for the transition from secondary to high school and to college.
- Developing curricular standards that places emphasis on attainment of fundamental cognitive skills and competencies, and that can help students from the SEDGs to acquire college ready and generalisable career ready skills.
- Providing students with academic support and career counselling services in schools in order to ensure that all students have the opportunities to pursue higher education.

Part II: Higher Education

4.4 Equalising Access to Higher Education Opportunities in India

Policy Goal

Higher education in India has expanded considerably in the past decades. The country is in the stage of massification of higher education. The NEP 2020 aims to increase the Gross Enrolment Ratio from 26.8 per cent (MHRD 2018) to a stage that is close to universalisation (50 per cent) by 2035. Along with increase in enrolment, the NEP aims to increase access opportunities of students from the socio-economically disadvantaged groups (SEDGs) and focuses on equalising the access opportunities by attending to their specific problems. It is to be noted that although the enrolment ratio of SEDGs has improved over the years, inter-group disparities in access to higher education opportunities persists. Disparities in access to HE has three dimensions, namely, regional disparities, group disparities and disparities between sexes.

4.5 Issues of Concern

The equity concerns in higher education include regional, social and gender disparities. They also include disparities at the entry level, in academic interactions and outcomes and in facilitating inclusive campuses.

Regional variations in the GER indicate that enrolment improved in some states, with some states falling behind. One of the reasons for widening of regional inequalities is expansion of private higher education institutions. States with higher share of private institutions accounted for higher GERs and states having predominantly public universities and colleges have a lower density of institutions and GERs. Further, private higher education institutions are more concentrated in urban areas, fuelling rural-urban disparities in enrolment rates.

Social disparities in enrolment in higher education continue to be high. Enrolment ratios continue to be lower for students from the SEDGs. Many factors cumulatively lead to disadvantages for students in

accessing opportunities for higher education. These disadvantages include hailing from low socio-economic status families; being first in the family to access higher education; and residing in rural areas with poor learning infrastructure experienced through their educational pathway.

Gender disparities in access to HE opportunities continue and enrolment is skewed in favour of men. Women from marginalised caste groups are constrained by financial capacity of households and comparatively low levels of education attained by previous generations. Gender disparities in choice of courses are largely influenced by differences in educational investment by families, medium of instruction and distance to and the safe environment of the HEIs. Families prefer young women to stay at home (and not in hostels) as they access and participate in higher education.

Another trend in social disparities is that women and socio-economically disadvantaged students are under-represented in programmes of study, such as STEM subjects, and have a far greater representation in arts and social science subjects. Multiple disadvantages faced by women and students from the SEDGs influence their chances of gaining access to elite/prestigious institutions and studying high value subjects. The share of students with disabilities in enrolment remains significantly lower (less than 1 per cent) than legally mandated 5 per cent reservation of seats in HEIs. Evidence further shows that the share of PWD students from the socially disadvantaged groups such as the SCs, STs and OBCs is significantly lower as compared to the rest. A pressing concern related to students with disabilities is related to a lack of comprehensive database on disabled at the institutional level as well as by subjects studied.

4.6 Implementation Strategies

Since the problems faced by disadvantaged groups vary, strategies to address the problems should also vary accordingly. In order to operationalise the goal of improving access of students from SEDGs and securing their equal access to higher education opportunities, following efforts would be needed.

4.6.1 *Regional Disparities*

- Priority in establishing quality higher education facilities in under-served districts will be essential to reduce regional disparities.
- Improving availability of high quality HEIs in aspirational districts and Special Education Zones (SEZs), envisaged to be created through a contiguous geographical and/or socio-cultural area dominated by SEDGs.
- Designing a catchment area policy measure for students from SEDGs residing in the SEZs. The catchment area policy could include a percentage of HEIs seats reserved for candidates residing in the SEZs. This form of affirmative action would be most beneficial for improving HE access for population groups within the SEDGs, such as the scheduled tribes and minority groups.
- Increasing the availability of higher education institutions offering professional and technical courses in rural, underserved regions, Aspirational Districts and in SEZs dominated by the SEDGs.
- Expanding government public and private aided institutions, particularly in professional and technical courses will be important to improve access of SEDGs to STEM and management subjects.
- Avoiding consolidation of universities and colleges into large HEIs of 3,000 or more students in SEZs and those located in areas dominated by SEDGs.

- Increasing the budgetary allocation for scholarships and better targeting to reach students from rural and marginalised communities.
- Encouraging private higher education institutions to provide scholarships as financial concerns restrict access to HE and limits choices of courses of students from the SEDGs, especially in engineering and professional subjects.
- Extending reservation policies in private sector (since it is the private institutions that offer technical and professional courses) would also promote equity in access to high value subjects.
- Provisions of hostels in urban areas to improve access of students from remote areas to HE.
- Improving access of students from SEDGs, women and persons with disabilities (PwDs) through provisions of scholarships to enrol in full time distance education.
- Including more HE instruction in Hindi and local languages no doubt will be beneficial. However, considering that English continues to retain its status as a global language, enhancing access to school-level education in English for women and for SEDGs will be important to serve the aspirations of families, who do not access English-medium schooling?

4.6.2 *Increasing Access for Students from the SEDGs in HE*

- Each HEI needs to strictly implement and monitor the caste-based reservation policies, reservation policy for students with disabilities and existing catchment area policies in admissions.
- HEIs need to play a more active role through outreach activities in increasing access to knowledge of college-going process and informing the communities of their academic offerings and services.
- Outreach activities should be located in colleges and communities, and through an enhanced role of faculty members.
- Steps that HEIs and colleges can take to increase access to HE opportunities may include the following:
  - Colleges' web information needs to be updated and made clearly available to applicants; other forms of information should also be maintained such as newspaper advertisement campaigns.
  - The admissions process needs to be more inclusive, with clearer guidance in filling of application forms, information on scholarships and direct assistance (e.g. internet access), particularly for the most marginalised communities.
  - Faculty members can play an important role in enhancing equitable access to HE in rural and marginalised communities by making visits to the villages for outreach and be the 'mentors and guides' that the NEP envisages.
- Students who are first in family to overcome several social barriers to access higher education are 'trailblazers.' These students can be peer-mentors and significant points of reference and inspiration for the younger people in their family and community.
- Administrators in HEIs need to identify student groups that are under-represented in campuses and coordinate with schools to establish pathways of access for students from under-represented groups especially to the public selective and prestigious higher education institutions.

- For women, safety is paramount as a concern for parents. Since their HE choices are limited by perceptions of risk involved in going 'outside' for college education, efforts from administration to make college campuses more appealing, well equipped and safer would enhance women's bid to convince their parents to allow them to attend HE.
- For increasing access to students with disability, as instructed in the NEP 2020, campus administrators should ensure all buildings and facilities are wheelchair accessible and disabled friendly.

4.6.3 *Achieving Academic Integration and Social Inclusion for Equitable Learning Outcomes*

The NEP 2020 recognises that some of the problems currently facing higher education system in India include lesser emphasis placed on developing cognitive skills and improving learning outcomes (9.2b). Promoting equity in learning outcomes from early childhood care and education through higher education is one of the major goals of the NEP 2020 (P 3).

Current Issues and Challenges of Academic Integration

As system is massified, students are not only coming from diverse socio-economic backgrounds but also with various academic experiences. Prevailing difference in academic preparedness level is crucial challenge to envisage an equitable higher education system. Inadequacy of our system to address academic differences leads to legitimisation of unequal learning outcome. As a result, advantage we have achieved in terms of providing access to disadvantaged goes waste. Social and economic implications of this scenario are manifold. The challenges of academic integration are as follows:

Though there are some interventions by UGC to promote diversity and discrimination free campuses, institutionalising equity and diversity as a value of inclusion is not supported by concerted efforts in the forms of facilitating policy frameworks. As a result of lack of policy frameworks and insensitivity of teaching community towards diversity and equity, students from various equity groups are not provided adequate support and resources to bridge their academic gaps, if any and navigate towards realising their goals. Though student body has become very diverse, teaching-learning practices continue to remain without any change.

Combined with difficulties faced in social domains, lack of academic support in classroom makes students from disadvantaged groups feel excluded.

Ongoing programmes such as remedial coaching classes aim to address academic challenges faced by various equity groups. However, current remedial programmes are not reaching all needy students and remedial teaching is less effective and efficient. As a result, students who face difficulties in academic adjustments are not addressed. Lack of understanding on basic concepts severely constrains them to cope up with rest of academic workload. It ultimately leads students to engage in academically non-supportive activities or withdraw from colleges and universities. Thus, higher education becomes a space for social reproduction of inequalities rather than social transformation.

4.6.4 *Challenges of Social Inclusion*

There exists a mismatch between socio-cultural fabric of higher education campuses and diversified student body that exists as a result of massification. This mismatch leads to non-traditional learners to feel excluded

and persistence of discriminatory attitudes and actions in socio-cultural transactions. Lack of social exclusion is manifested in the following domains.

Phase of Admission

Marginalised students are subjected to identity-based humiliation and discrimination by those who manage the admissions process. After admissions the classroom practices and the non-inclusive nature of teacher-student interactions pose further challenges. Teachers-student interaction is weak in general and it is particularly weak in regard to the SCs and STs.

- Teachers in general do not consider continuous and effective teacher-student interaction outside the classroom as important.
- Prevailing attitude among the teaching community that students from disadvantaged social groups lack motivation and real interest in academic works is reflected in pattern of student-teacher interaction.
- Women students are less likely to get opportunities to interact with teachers. Lower share of women faculty members in some of the disciplines also exacerbates the situation.

Peer Interactions

Peer interactions not only provide resources for academic growth but also for capacity to live and learn with other persons of diverse kinds. Following trends are visible among students in higher education.

- * Students from various social groups tend to form peer group with students from their own social group.
- * Students from disadvantaged groups prefer to choose peers from the same groups in order to avoid discriminatory behaviour from others in a mixed group.
- * While campuses are expected to be the space for intermingling and engaging with others, non-diversity of peer groups is a threat to social cohesion and a reflection of how exclusive campus spaces are.

Student - Administration Interactions

Overall, students' experience in any campus is influenced by many factors. The sphere of student-administration interactions is one among them. Following challenges are observed in the domain of student-administration.

- Due to lack of sensitisation on issues of diversity and equity, administrative staff is more likely to behave as if following their business is their usual approach. Lack of sensitivity is often reflected in discriminatory attitudes and behaviour.
- As students from social groups such as SCs and STs and differently abled are expected to interact with administrative staff for their scholarship and other state and institutions supported equity programmes and provisions such as stipends, insensitive behaviour and discriminatory attitude of staff members place the former in humiliating and dehumanising situations.

Avenues for Co-Curricular Activities

Ideally, all students should have equal opportunities to participate in co-curricular activities according to their interest. Participation in co-curricular activities is integral to holistic development. Lack of social inclusion in co-curricular activities is manifested in the following ways.

- Opportunity for participation in co-curricular activities such as campus level clubs and campus unions is not equally distributed among the student body.
- Special needs of the differently abled are not adequately taken into consideration. As a result, differently abled students are less likely to actively participate in co-curricular activities.
- There exists, in some campuses, a practice that certain social groups are over-concentrated in certain co-curricular activities such as National Service Scheme.
- Patriarchal norms existing in campuses impose restrictions on women students to take part in co-curricular activities. As a result, some of the activities continue to remain exclusively for male student**s.**

4.6.5 *Areas and Strategies for Implementation*

Following strategies may be implemented to ensure academic integration of students, irrespective of background characteristics but with a targeted focus on students from the SEDGs.

- A pre-admission orientation may be provided to aspiring students who seek admission in their institutions before and during the admission process. Historically marginalised students such as those from the SC, ST and OBC groups may be given priority.
- As a first step, diagnostic tests may be conducted in early days after admission to assess subject competency and proficiency in the language which is used as Medium of Instruction (MoI).
- Based on the diagnostic tests, an academic enrichment programme may be organised in HEIs. Considering the significance of language proficiency, a separate wing may be set up to promote language competence in language used as MoI and English.
- It is a practice in HEIs to provide remedial programmes once the teaching sessions are over. This approach needs to be changed. Those who need academic support should be given an academic enrichment programme in advance. This way the actual classroom will become more inclusive.
- Willing senior students may be assigned the role of teaching assistants for academic enrichment programmes.
- As far as possible, academic enrichment programmes need to be part of master timetable of HEIs and an integral part of the academic affairs programme.
- More project based learning and collective and collaborative learning opportunities may be provided to students. It is important to ensure that the targeted student groups are from diverse backgrounds.
- Teachers need to go through a sensitisation programme. This will help teachers to value diversity and equity.
- Teachers of universities and colleges should be sensitised and provided resources to practise a pedagogy which takes into account the learning requirement of a diverse student body.

- A Centre for Developing Pedagogy for Inclusive Higher Education can be explored as an institutional mechanism to carry out research-based evidence and perspectives for inclusive education.
- ICT infrastructure and ICT based resources can be used for supplementary education and academic enrichment programmes. Adequate caution should be taken to avoid the emergence of ICT based learning as the primary mode of learning for marginalised sections.
- HEIs which follow English as MoI may explore classroom-based bilingual teaching-learning in order to provide learning support for student from non-English medium backgrounds.
- Translations of classic works and study materials may be developed in the local languages in order to provide support to students facing problems of language comprehension. However, in HEIs which follow English as MoI, students are expected to gradually move to English in higher stages, say, from second year of UG degree.
- Teachers must ensure that academic leadership opportunities are equally distributed among the students.
- A mechanism should be in place to assess the academic performance levels of students in every semester. This will help to identify those who lag behind and need special attention
- All HEIs must publish the academic outcome of students from various backgrounds. This can be used as one of the criteria for institutional accreditation and ranking.

4.6.6 *Strategies for Making Campuses Socially Inclusive*

- Campus Diversity Policy (CDP) needs to be developed by each institution. Development of CDP is a first step towards institutionalising social inclusion in campus.
- While general guidelines may be developed at national or state level, institutions should be given autonomy to accommodate the local contexts and use local resources.
- Developing CDP should be a participatory process. Each and every stakeholder of college or university should be a part of this exercise. It needs to be seen as a first collective exercise to espouse values of diversity and equity in campuses.
- Institutions may develop a "Diversity Database" (DD) on student characteristics including social origin, economic class, parental education, parental occupation, regional location, physical ability, language background, preferred gender identity (male, female and transgender), marks and grades in the qualifying examinations and the types of school from which they have graduated.
- Adequate attention must be given to ensure that CDP is adequately reflected in vision and mission of the institutions and same should be made available for general population and campus stakeholders (website, college diary, banner/boards etc.).
- Based on the local contexts and analysis of Diversity Database, a Diversity Plan (DP) needs to be developed by each institution. DP should be an integral part of the Institutional Development Plan (IDPs).
- There are several bodies entrusted with the task for providing support system for students from disadvantaged backgrounds. Multiplicity of institutional mechanisms without any interlinkage with each other and statutory power often leads to ineffective implementation. It is recommended that

except statutory institutional mechanisms like SC/ST cell, all other institutional arrangements may be brought under an umbrella organisation called Centre for Optimising Diversity and Equity (CODE). Senior faculty members at the level of PVC for universities or vice-principal for colleges may be appointed as director/in-charge of CODE which must comprise faculty members, staff and student representatives.

- CODE may provide opportunities for high school students in their locality to visit institutions and interact with teachers and students. This will help students from underprivileged sections and less prestigious schools to develop a knowledge and awareness about college and higher education opportunities.
- All HEIs should have an admission support wing under CODE. Support of senior students may also be taken for this purpose. This will make admission experience of students from disadvantaged groups more welcoming and tension free.
- It is the responsibility of the HEIs to ensure that all students feel welcomed and well respected at the initial days of admission and throughout the campus life.
- While a general induction programme may be organised for all first-year students, need based small group induction may be considered for students group which needs special attention. Discipline/ subject or social group could be the basis for need based group formation.
- A national Online Diversity Test (ODT) may be introduced as a zero credit but mandatory course. The idea is to ensure that every student will be aware about the values of diversity and need to behave in a respectful way on campus. Tests can include questions regarding values of diversity, legal provisions and acts and guidelines from the respective statutory bodies such as UGC. For instance, questions may relate to UGC anti-ragging initiatives. It is mandatory for each and every student of higher education to pass OTD in stipulated time after the admission, say six months from the date of admission.
- Student admission to hostels may be on random basis and adequate strategies must be evolved to ensure that certain social groups are not dominant in any one hostel or block.
- Each institution may try to ensure that campus spaces are inclusive. For example, icons and symbols available in campuses must be representative of values of diversity.
- Institutions may ensure that secular values are upheld. Institutions may celebrate secular festivals and days such as Constitution Day and avoid celebrating non-secular events in campuses.
- HEIs may organise events and programmes which provide awareness about values of diversity and equity.
- Appropriate mechanism should be in place for students to share their feedback and complaints regarding any issue concerning respect of diversity and violation of equity.
- HEIs may devise strategies to collect feedback from students on issues of diversity and equal treatment and opportunities periodically, particularly during early weeks after admission.
- Equal opportunities should be provided to students to access and be part of campus level clubs and activities. It is necessary to ensure that certain activities are not dominated by certain social groups
- All campus level bodies such as campus unions and clubs may be encouraged to select office bearers from various groups and women.
- A safety audit may be carried out to identify the campus spaces which are unsafe for women students.

4.6.7 *Increasing Employability Potential of HE Graduates Equitably*

The NEP 2020 considers increasing employability potential of HE graduates equitably as a priority area. The policy aims to increase employability skills that students must acquire during their academic programmes. The aim is to prepare well-rounded learners with 21st century skills and promote work readiness of HE graduates, in order to increase their chances for taking advantages of new opportunities and be more globally competitive. The NEP 2020 considers acquisitions of employability skills as part of the expected learning outcomes and refers these skills as Graduate Attributes.

It is widely acknowledged that to thrive in a digital technological era, HE graduates will need to possess cognitive skills, generic attitudinal and socio-emotional skills such as teamwork and respect of peer-perspective, communication skills, planning, independent working skills, presentation skills and decision-making skills are valued by employers. Importantly, information and communication technology (ICT) skills and science, technology, engineering, and mathematics (STEM) skills are important to be successful in a digital era. These are sets of inter-related attributes that HE graduates will require to mobilise to meet complex work-place demands. Possessing a wide set of such skills has a positive association with earnings that goes beyond a worker's educational attainment.

One of the major equity concerns facing higher education system is that educational opportunities to acquire these sets of graduate employability attributes are unevenly distributed. HE graduates from the SEDGs, from disadvantaged geographies, and women have a lower likelihood of gaining access to employability enhancing educational opportunities.

Skill gaps persist due to inequitable access to employability enhancing educational opportunities.

Even as more and more students from disadvantaged population groups go on to acquire higher or professional education, employability skill gaps between HE graduates from the disadvantaged population groups and those from privileged backgrounds persists. Disadvantaged family backgrounds and language, location of residence in disadvantaged geographies and gender identities continue to negatively correlate with the development of employability skills.

Gaps in employability skills by socio-economic status and location of residence.

Inequalities in access to high quality educational pathways, first and foremost, become the source of creation of skill gaps. HE graduates from higher socio-economic families (where parents are highly educated, have high income and high occupational status, and reside in urban areas)generally have greater access to high quality educational pathways vis-à-vis students from the SEDGs and rural locations. Students from affluent families are more likely have a higher academic achievement, cognitive skills, and socio-emotional skills (such as skills of inter-personal interaction and communication) which are pre-requisite for developing job-relevant employability skills.

A major area of concern of the employers is related to limited affective and socio-emotional skills of HE graduates. Empirical evidence shows that socio-economic status (SES) also correlates with the development of socio-emotional skills. Possessing socio-economic skills is known to facilitate HE to work the transition and make employability attributes more sustainable. Importantly, regional language as a medium of instruction acts as an employability barrier for HE graduates from low SES backgrounds in their bid to acquire English language skills for communication.

Gender and socio-economic inequalities in access to affordable and quality technical and professional education.

Under-representation of women and students from SEDGs in STEM subjects and in high quality technical HEIs make university graduates from these groups less employable. Persisting gender and social differences in the HE programmes and in HEIs imparting technical and professional education that prepare students in areas that are fast gaining prominence in the knowledge-based economy, means that women and students from the SEDGs will benefit less from the new job opportunities in STEM-related occupations. In addition, evidence suggests that HE graduates from the low SES families are less likely to be aware of the new opportunities and sectors emerging in India and globally.

Inequalities in access to internship opportunities while at the university.

Increasingly, evidence suggests that internships have significant benefits in improving employability potential of students and help them in securing future career opportunities. Internships opportunities are known to provide opportunities not only to gain relevant work experience and build professional networks. Internships help in preparing students with job-relevant employability skills which are valued by employers, such as teamwork, adaptability, planning and effective communication. Unfortunately, systemic barriers and reluctance to apply lowers the likelihood of students from the SEDGs and from disadvantaged population groups to gain access to internship opportunities.

4.6.8 *Strategies for Implementation*

Increasing employability potential of the HE graduates equitably will require system level and institutional level efforts. Efforts at the institutional level are specifically of importance. As noted, trainability of HE graduates is more important than trained persons in the job market. Institutions of higher education are central to ensuring that HE graduates are trainable and have transferable skills that are valued in the labour market.

System level efforts

- At the system level, first and foremost, a high-quality educational system can play an important role in reducing the skill gaps by improving cognitive skills and learning outcomes.
- Developing an integrated higher education system as envisioned in the NEP 2020 has the potential to improve students' employability potential and provide them opportunities for professional development.
- Establishing the National Higher Education Qualification Frameworks (NHEQF), promoting flexibility and transfer of credits in learning pathways, recognition of prior learning and improving quality of open and distance learning are considered as ways of integrating higher education system.
- In an integrated HE system, improving chances of students from the SEDGs to increase their employability potential and gaining opportunities of enhancing their qualifications should be prioritised to advance equity.
- Promoting access of students from the SEDGs to technical and professional programmes at the HE level will be an important step towards increasing their employability potential in areas that are fast gaining prominence in the economy.

Institutional level efforts

- Providing student support services at the institutional level that guide students to choose their subjects will help students from the SEDGs to make informed choices of course of study and the choice of their career pathways.
- Providing equal access to degree professional study programmes offered under the scheme of Higher Order Skills for Higher Education (HOSHE) by providers on higher education campuses. These efforts are to develop HOSHE and enhance graduate employability of students of the Bachelor of Arts, Science and Commerce programmes, including BVoc programmes.
- Provisions of English language training, soft skills and communication skills training, especially among HE graduates from the disadvantaged sections studying in elite institutions, in order to increase their employability potential.
- Creating an inclusive internship programme that provides mentorship support to help students from SEDGs to navigate requirements of securing internships for work-experience.
- Strengthening and effective implementation of the existing programmes by the MoE and the UGC for students from the SEDGs in order to improve their competitiveness in selection tests and thus qualify for employment in various government services.
- Initiating programmes to cultivate civic learning in HEIs in order to enable students to value and respect perspectives of others and develop such social-emotional skills as are considered critical for success at the workplace.

CHAPTER

5

Standard Setting and Accreditation for School and Higher Education

CHAPTER 5

Standard Setting and Accreditation for School and Higher Education

Part I: School Education

5.1 Policy Goal

THE National Education Policy (NEP, 2020) lays emphasis on the institutionalisation of effective quality self-regulation and accreditation system by establishing State School Standards Authority (SSSA), as an independent state-wide body. The SSSA envisions to establish minimum set of standards referring to global practices for ensuring compliance, transparency and accountability in school education sector. A School Quality Assessment and Accreditation Framework (SQAAF) is expected to be developed by the states for enhancing curricular and academic standards. The new Education Policy (2020) further focuses on improving the regulatory system with complete transparency to empower schools and teachers for improving educational outcomes. A critical role of Department of Education is envisioned with independent responsibilities for overall monitoring, policy making for continual improvement, educational operations and service provisions for the public schooling system. Considering education as a public good, NEP emphasises on transforming the governance of Department of Education and setting standards for transparency and accountability.

5.2 Current Practices

The school education system in India is witnessing fast expansion, coupled with increasing diversity of student population. The complexity of diversified social contexts (rural, urban and tribal), composition of schools (large and small) and conditions (physical and human resources and provisioning) are major challenges to achieving equitable quality education for all children. Indian schools are also witnessing issues of enrolment, leading towards closures and mergers of the schools. Besides, a learning crisis amongst the students is placing immense pressure on schools and teachers to be more accountable for improving learning outcomes. Ineffective governance and regulation of the school education system by the Department of School Education is also hindering the management of school education sector. There is now a greater realisation that in view of the huge investments in terms of human and other resources in school education sector, the school needs to perform and deliver at its optimum level.

The standard setting for school evaluation and accreditation in India is a new and emerging phenomenon, aimed to ensure school quality and improve the learning outcomes. The National Programme on School Standards and Evaluation (Shaala Siddhi) is an innovative initiative launched by the Government of India in 2015 to institutionalise school evaluation. Historically, school inspection and supervision by education authorities were in practice, and the inspection was generally conducted without explicit criteria. Some states like Gujarat, Madhya Pradesh and Karnataka have taken initiatives regarding school assessment, monitoring, and accreditation. However, well defined standards reflecting the schooling processes were not adequately addressed.

The Shaala Siddhi programme provides a new understanding on standards setting for school evaluation and accreditation. The major objective behind launching the Shaala Siddhi programme is to establish and refer to an agreed set of standards and processes which all schools must strive to achieve in a sustainable manner. As part of this endeavour, a set of standards has been developed through a mutual consultative process with states and other stakeholders. Accordingly, School Standards and Evaluation Framework (SSEF), as a strategic instrument for school evaluation and accreditation, has been developed. The Framework identifies 7 domains as 'key performance areas' and '46 core standards' as reference points for evaluation and action for improvement. The Key Performance Domains include — Enabling Resources of Schools, Teaching Learning and Assessment, Learners' Progress, Attainment and Development, Managing Teachers' Performance and Professional Development, School Leadership and Management, Inclusion Health and Safety, and Productive Community Participation. The Shaala Siddhi programme has a dedicated web-portal (www.shaalasiddhi.niepa.ac.in) that provides access to all materials, guidelines, uploading of dashboards etc. The Dashboard provides evidence of self-disclosures about the performance level of schools.

The Shaala Siddhi programme has set the standards and developed the methodology for school performance evaluation and accreditation. All the states are implementing the Shaala Siddhi programme for the last three cycles (2016-18, 2018-19, 2019-20). The school evaluation data are used for classifying the performance levels of schools as Very High, High, Moderate and Low. Accordingly, states and UTs are also ranked, indicating the performance levels of schools. The self-disclosure school evaluation report facilitates schools to take action for improving the performance through the prioritisation of core standards. On the other hand, the system uses the school evaluation data for understanding each school performance, its developmental trajectories and school specific support.

Global Practices on Standard Setting for School Evaluation and Accreditation

Internationally, standard setting for evaluation and accreditation of school performance is now increasingly being considered as potential levers of change. Though the school evaluation and accreditation systems globally vary in their characteristics, they share the common purpose of improving the teaching and learning process, learning outcomes, school performance, etc. through a well-defined set of standards.

Standard setting is a critical part of school education discourses. It identifies criteria for measurable expectations within the broad framework of key areas of school performance. These standards formulate measurable expectations, set benchmarks for quality, and provide a common basis for assessment, evaluation and accreditation of school performance. Thus, standards can be used as a yardstick for measurement. The need of having a national set of standards that all schools throughout the country must use is based on the argument that national standards would:

- Raise the level of expectations for all students in a class, school, or education system.
- Assure that all students meet national and global levels of achievement.
- Ensure better accountability through an improved teaching learning process and schooling practices.

The standard setting process has some common characteristics across the globe. Various countries have established national educational standards to clarify the ultimate goals for the school system and specify the expectations from the major actors and processes. The need for adoption of a coordinated approach to setting standards is recognised globally for improving the educational systems and enhancing their performance. Standard setting for school processes, typically, includes the development of two components —(i) academic content standards, which describe what an individual should know and be able to do in the

core academic content areas; and (ii) performance standards or benchmarks (sometimes called indicators), which define excellent and good in terms of lower and upper real limits. They define how individuals demonstrate their proficiency in the skills and knowledge as required by national content standards; and proficiency levels which assign value to examples of an individual's work expected at certain development levels. Globally, standards are set for learners that guide school instruction, assessment, and curricula within a country, state, school, or academic field; professional standards for teachers and school leaders; school evaluation and accreditation standards; and standards for educational programmes. The school evaluation and accreditation standards include the common core areas such as teaching and learning, assessment, professional learning, leadership and management, etc. The standards set are basically related to the schooling processes and practices.

A quick overview of international practices on standard setting for evaluation/inspection/accreditation reveals that many countries have a framework of institutional arrangements and approaches in place. Some countries have established predetermined criteria for external evaluation, set by the central education authorities (the Netherlands, Portugal, the United Kingdom, the Czech Republic and the Slovak Republic) or set by departments within ministries or education authorities (as in the Flemish Community of Belgium, Catalonia, Andalucía and the Canary Islands in Spain, and Iceland). In Poland, Spain and England (OFSTED), the evaluation criteria were subjected to standardisation for evaluating schools. Countries like Denmark, Belgium, Hungary, Canada, and the United States have developed standards for schools for the purpose of school evaluation.

A comparative analysis of England, Finland, Australia, USA, New Zealand, Korea, Thailand, India etc. reveals the following commonalities.

- Evaluation/Accreditation System in place (school evaluation/assessment/review/accreditation comprising both self and external evaluation),
- Bodies Responsible for Evaluation/Accreditation (Institutional Framework),
- Setting Standards on common core performance areas,
- Tools/Framework along with guidelines,
- Defined methodology and processes.

A comparative evaluation of school evaluation, inspection and accreditation in England and India has been annexed.

5.3 Implementation Strategies

The planning for implementation of NEP's recommendations on standard setting and accreditation of school education requires some desired strategies based on global and national practices.

5.3.1 *Framework for Establishing and Operationalisation of State School Standards Authority (SSSA)*

The NEP highlights the need for establishing State School Standards Authority (SSSA) as an independent body by all the states and UTs. It would be responsible for ensuring that all schools follow certain minimal professional and quality standards. Therefore, operationalisation of SSSA necessitates a detailed guideline. The guideline for establishing SSSA would incorporate its role and function, physical and human resources,

staff etc. The guidelines would also reflect on the time line, finance, rules, regulations etc. to set the standards for school education.

The vision of SSSA is to establish professional and quality standards for ensuring autonomy, accountability and transparency in school education sector. The mission of the SSSA, accordingly, is twofold: (l) to establish professional and quality standards for promoting an effective quality self-regulation or accreditation system, and (2) to establish a minimal set of standards based on basic parameters and to encourage schools to meet the established standards. The SSSA would provide an accreditation process designed to establish and uphold standards, in order to strengthen the quality of education in each school.

The objectives for establishing SSSA includes the following:

- promoting an evidence-based approach in setting and improving standards;
- providing strategic leadership in improving the standards of school education;
- ensuring the regulatory standards for self-disclosures; and
- ensuring registration and accreditation of all type of schools — public, private and philanthropic.

The major roles and functions of SSSA would be as follows:

Setting Standards: The SSSA would establish a minimal set of standards based on basic parameters (namely safety, security, basic infrastructure, number of teachers across subjects and grades, financial probity, and sound processes of governance), which will be followed by all schools. The standard setting for schools will be decided by the SSSA in accordance with the best global practices and in tandem with SCERTs. The School Standards and Evaluation Framework of the Shaala Siddhi programme can be used as key instrument for school evaluation and accreditation.

Management of Public Website: The SSSA would be responsible for development of a web-portal to monitor the compliance of standards by schools. This would ensure public self-disclosures by schools and adjudication of the public grievances, etc. The format of self-disclosures will be developed by SSSA.

Reporting: The SSSA would be responsible for publishing reports so that schools and the entire system may use them to improve the overall quality of education and training. This would also guide the policymakers about the effectiveness of the services. The SSSA will ensure integrity, fairness, equity, transparency and respect that would help to win the trust of public for delivered educational services.

Stakeholders: The SSSA would cater to the needs of all stakeholders like students and teachers from ECCE to Class XII in every school in India. Other significant stakeholders are parents, school administrators and the bodies representative of the education systems/sector, including the CBSE, ICSE, and SCERTs, etc.

Constitution of SSSA: All the states should be responsible for establishing the SSSA as an independent body. The model SSSA will be guided by a Director and at least five experts with the specialisations in educational management and standards setting. There would also be an ICT professional to develop and maintain web portal. This may be supported by an administrative staff. There would be one executive body to guide the SSSA. The composition may include ex-officio members from other institutions, including eminent educationists. The SSSA may possibly have three committees — a general body headed by the education minister, an executive committee headed by the principal secretary of the education department, and a committee for setting up the standards for evaluation and accreditation, to be headed by the secretary for primary and secondary education. The committee for setting up the standards for evaluation and accreditation will have four sub-committees — standard setting committee for each subject, standard setting committee for

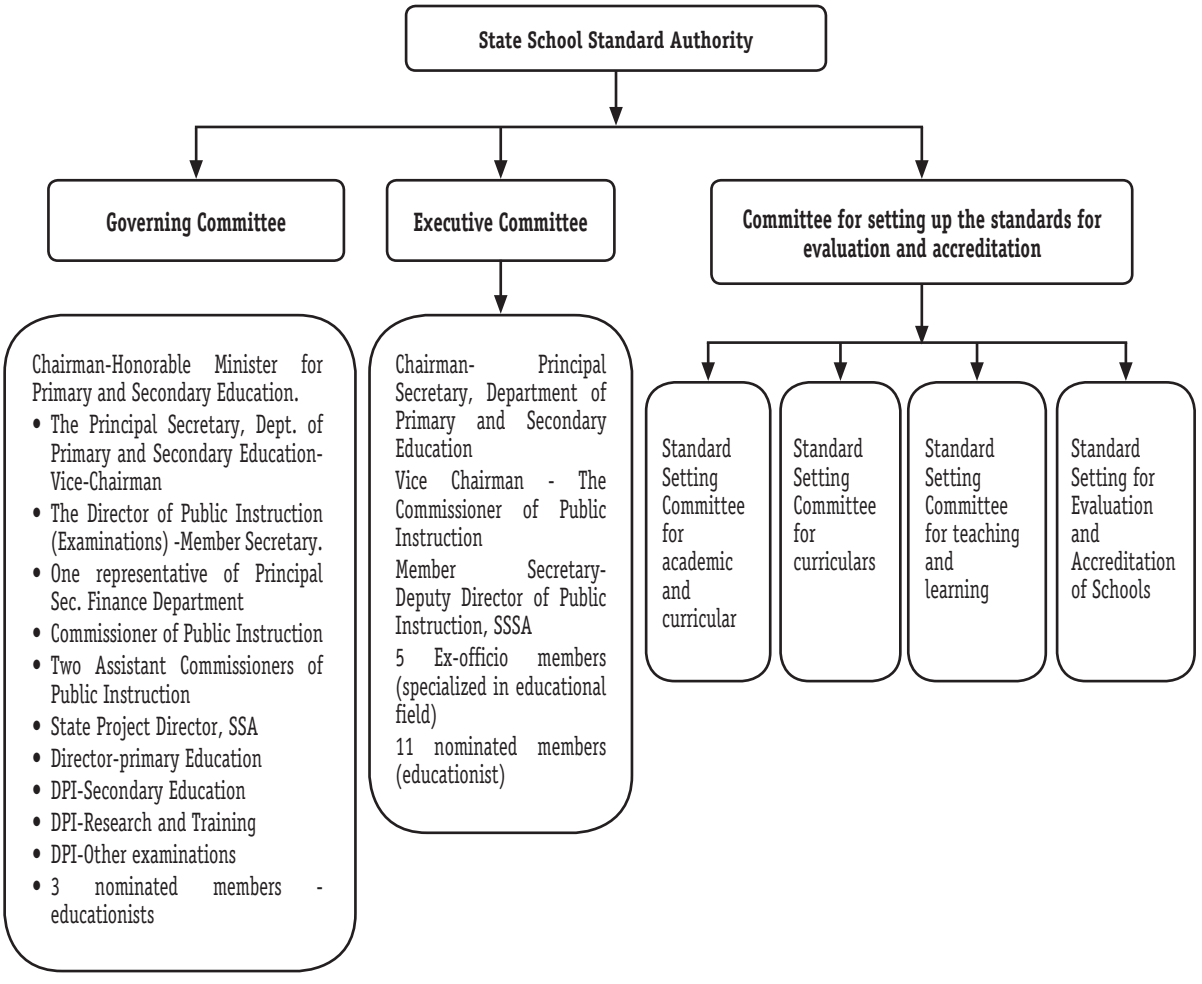
teachers, standard setting committee for school leadership, standard setting and accreditation of schools. The standard setting committee for each subject will also have a review committee for each subject under it.

The minister of education and principal secretary of the education department will be the chairman and vice-chairman, respectively, of the general body of the SSSA. Besides them, the primary education secretary, chairman of the State Secondary and Higher Secondary Education Board, commissioner of schools, director of primary education, director of the State Council for Educational Research and Training and three educationists appointed by the state government will be members of the body.

The principal secretary of the education department and commissioner of public instruction will be the chairman and vice chairman respectively of the executive body of the SSSA. Besides them, deputy director of public instruction, 5 ex-officio members and 11 nominated members from the field of education will be the members of the executive committee.

The secretary of the education department will be the chairman of committee for setting up the standards for evaluation and accreditation. Each sub-committee will be headed by a director and a joint director. Besides them, 15 nominated members from the specialised fields of education will be members of the committee. Also, separate committees will have 20 nominated educationists for specialised disciplines.

Organisational Structure



5.3.2 *Standard Setting and Development of School Quality Assessment and Accreditation Framework (SQAAF): Building on Shaala Siddhi Programme*

Standard setting and development of SQAAF are intricately related to the conceptual framework, objectives and holistic understanding about schools. The standard setting supports the formulation of measurable expectations from schools, schooling processes and practices. It can also be used as measures or benchmarks for quality of school performance and outcomes. However, standard setting is only one link in a chain of activities from the setting of standards to evaluation and accreditation. It is a means to an end and never an end in itself. It is the first step towards quality improvement process.

NEP emphasises on development of a set of standards for school regulation, accreditation and governance: Establish a minimal set of standards based on basic parameters (namely, safety, security, basic infrastructure, number of teachers across subjects and grades, financial probity, and sound processes of governance).

NEP recommends that all schools should follow professional and quality standards along with a minimal set of standards for physical and human resources. The minimal set of standards can be decided on the basis of levels of schooling and composition of schools. Hence the framework for the minimal set of standards for ensuring professional and quality standards should have these features:

(i) Physical infrastructure (school premises, playground, classrooms and other rooms, electricity and gadgets, library, laboratory, computer, internet facilities, ramp, mid-day meal, drinking water, hand-wash facilities, toilets etc.).

(ii) Teacher provisioning (general teachers for primary level, subject specific teachers, art teacher, physical education teacher, special educators, vocational teachers etc, and level wise norms for teacher provisions).

(iii) Financial probity (appropriate use of grants, community contributions and CSR (Corporate Social Responsibility) contributions etc.).

(iv) Sound process of governance (Organisation and management of SMC/SDMC, School community linkages, Community as learning resources, School leadership, Student committees etc.).

(v) Safety and security (physical safety, psychological safety, mental health and well-being, security of students and teachers etc.).

The enabling resources are critical to the effective functioning of the school. The optimum utilisation of resources facilitates conducive learning environment and ensure high standards of safety and security.

NEP further envisions to ensure that all schools follow minimal professional and quality standards. Therefore, these standards can be part of the overarching framework of the minimal set of standards based on basic parameters. This enables teachers to understand curricular expectations and adapt their teaching learning practices to meet the learning needs and outcomes of the students.

5.3.3 *Academic and Curricular Standards Linked to Development of School Quality, Assessment and Accreditation Framework (SQAAF)*

NEP stresses on publicisation of the academic and curricular standards for improving the quality of school education. Development of the SQAAF should incorporate a restructuring of the curriculum; enhance essential learning, critical thinking, experiential learning, curricular choices and integration, assessment for student development etc. The major objectives of developing the SQAAF are to ensure quality of school education, improving the performance of schools and students.

In order to develop the SQAAF, the following steps are desired. As the first step, there is the need for developing a conceptual framework, defined principles and explicit objectives. It would follow the identification of core areas and indicators. This would facilitate in setting standards as a measurable point. The academic and curricular standards of SQAAF should include (i) Holistic development of learners (ii) Curricular changes and expectations (iii) Teaching, learning and assessment. The SQAAF, as an accreditation framework, should have a holistic perspective about school education.

Building on Shaala Siddhi Programme

The Shaala Siddhi programme evolved over a long time following the systematic steps — Standards setting for the development of School Standards Framework and Guidelines; Web portal development; School performance evaluation (self and external) as an annual feature; Capacity development programmes; Institutional arrangement; School improvement plan and action for improvement; Classification of schools and states on the basis of self-disclosure performance reports.

The Shaala Siddhi programme has generated a momentum to institutionalise school performance evaluation for improved learning outcomes. It has accomplished the standard setting process and development of the framework. The SSEF has the following components along with the respective standards:(i) Enabling resources of schools (availability and adequacy; quality and usability of physical resources) (ii) Teaching-learning and assessment (iii) Learners' progress, development and attainment (iv) Managing teachers' performance and professional development (v) School leadership and management (vi) Inclusion, health and safety, and (vii) Productive community participation.

The States and UTs have developed the competencies of school evaluation and its methodology and processes as part of implementation of Shaala Siddhi. Schools have also developed the skills and competencies with a process-based school evaluation with greater understanding. There is a remarkable transformation in school education sector that 'school can make change'. Therefore, the standard setting and development under SQAAF may be built on the Shaala Siddhi programme.

5.3.4 *Development of Training Modules and Capacity Development on Standard Setting and School Evaluation/ Accreditation*

The proposed operationalisation process involves capacity development of state officials, more specifically the SSSA staff, for preparedness and effective implementation. NIEPA, as part of the Shaala Siddhi endeavour, is developing the training modules on standard setting, school evaluation and accreditation. This training package will be used to train critical mass of human resources who are accountable and responsible to extend support for school evaluation and accreditation.

The training package includes the following modules.

Module 1: School Quality, Effectiveness and Improvement

Quality of school education continues to be one of the key areas of educational reforms. School effectiveness is an important facet of quality of school education. School effectiveness aims to address the factors within school to enhance the learning outcomes of the students. It is also directed to the need for school improvement, in particular by focussing on alterable school factors. Thus, school effectiveness and school improvement are strongly correlated to each other. Therefore, this module aims to develop better understanding about the relationship among school quality, effectiveness, evaluation and school improvement.

Module 2: Standard Setting for School Regulation, Accreditation and Governance

Good governance and use of quality standards are critical for ensuring quality education. Standards are the norms and expected goals around which a regulatory and governance mechanism is organised. Setting of standards is, characteristically, leading to distribution of responsibilities between the national, state, district, block, cluster and school levels. If schools meet the standards set by the authority, then they may be granted the accredited status. The goal of the accreditation system is to ensure that education provided by schools meets acceptable levels of quality, ensuring transparency and accountability and also creating goals for institutional self-improvement.

Module 3: School Evaluation and Accreditation Methodology

School evaluation and accreditation are closely linked where school evaluation refers to the evaluation of an individual school — its performance against predetermined educational standards in a holistic manner. On the other hand, accreditation is the process of recognition that an institution maintains a certain level of predetermined educational standards. This module focuses on the processes, strategies and activities of school performance evaluation/accreditation leading towards quality improvement. It aims to enable schools to evaluate their performance in a more focussed and strategic manner and facilitate them to make professional judgement.

Module 4: Approaches for School Evaluation and Accreditation

Self-evaluation and external evaluation are two important approaches for introducing effective evaluation in school system. Self-evaluation is considered as the nucleus of the school evaluation process. It is intended to provide the school personnel with a common understanding of the school's overall performance and identify priority areas for development. External evaluation follows as a complementary exercise to self-evaluation so as to ensure that the two approaches work in synergy and respect the strengths and insights that each brings to the overall evaluation. It aims to develop a complete picture of the school for supporting its overall improvement. Accreditation is the process of establishing competence of a school in delivering the requisite elements of education and its ability to carry out evaluation to make professional judgement. Thus this module highlights different approaches and their importance in enhancing school performance.

Module 5: School Performance Data and Analytics for Transforming Schools

The school performance data and analytics reveal the current performance levels in the respective core standards and key performance areas. It supports schools and the system for decision-making and provides resource support for school improvement.

Module 6: Evidence-Based School Improvement

Global reforms are focussing on improving student outcomes by addressing the student, teacher, and school-level factors that are critical to improvement. School improvement is structured on the basis of analysis of current levels of school performance, set out priorities and targets for improvement for the period ahead. Therefore, this module aims to guide participants to school-led and evidence-based improvement.

Way Forward

The operationalisation approach provides the broad contours of standard setting and establishment of SSSA. The Shaala Siddhi programme's experiences can be leveraged in operationalising the SSSA, web-based management, contextualisation of SQAAF and capacity development of the states.

ANNEX 5.1

Areas	UK/England	India
Governance and Regulation of School Education	• The Department of Education (DoE) is central authority that oversees education in the country. • DoE formulates education policy for the country. • Allocates responsibilities to each of the 18 agencies and oversee their performance- Education and Skills Funding Agency, Standards and Testing Agency, School Teachers' Review Body etc.	• Ministry of Education Policy and Schemes to support school education. • State Government's Education Department formulates state specific policy through legislative acts and rules and execute and implement central and state policies. • Municipalities/School Boards/ Zilla Parishads/ Panchayats- Local bodies can also finance and run their own schools.
Regulation/ Affiliation and Inspection	• OFSTED regulates and inspects to achieve excellence in the care of children and young people, and in education and skills for learners of all ages.	• Department of Education- State, District and Block • Central and State Boards • Local Body • Other affiliating bodies
Financing of School Education	• Service delivery is done through public schools financed by Local Education Authorities	• State funding schools • Centre funding schools • State funding to aided schools • Unaided and privately managed schools (self-financing)
School Inspection /School Evaluation	Compliance is ensured by two inspecting agencies: • Office of Qualifications and Examinations Regulation (OFQUAL) • Office for Standards in Education (OFSTED) - which report directly to the Parliament.	• School Evaluation is institutionalised by the initiative of the Ministry of Education in collaboration with the State Government • The National Institute of Educational Planning and Administration is extending support in the form of research, academic and strategic planning and monitoring of the School Evaluation (Shaala Siddhi) in India.

Inspection and Evaluation	**Education Inspection Framework, OFSTED (Draft 2019)** (New model of inspection will be introduced soon) The framework applies to the inspection of: 1. maintained schools and academies 2. Non-maintained special 3. Pupil referral units. 4. Non-association independent schools. 5. Further education colleges, sixth-form colleges and independent specialist colleges. 6. Independent learning providers 7. Community learning and skills providers 8. Employers funded by the Education and Skills Funding Agency to train their own employees 9. Higher education institutions providing further education 10. Providers of learning in the judicial services 11. National Careers Service- careers advice and guidance 12. Registered early year's settings.	**School Standards and Evaluation Framework and Guidelines** • SSE Framework is a tool for both Self and External Evaluation. (Seven Key Domains and Forty Six Core Standards) • Evaluation of 1.53 million diversified schools- Government, Govt. aided and Private Schools
Principle of Inspection / Evaluation	**Compliance Orientation** • **Raising Standards and Improving Lives** • Inspection provides independent, external evaluation that includes a diagnosis of what needs to improve in order for provision to be good or better	**Improvement Orientation** • **'School Evaluation' as the means and 'School Improvement' as the Goal** • School Evaluation provides clear pathways for each school to understand its current performance levels and initiate action for improvement.
Focus Areas	**Four Areas** 1. Quality of education 2. Behaviour and attitudes 3. Personal development 4. Leadership and management.	**Seven Key Domains and Forty-Six Core Standards** 1. Enabling Resources of Schools 2. Teaching Learning and Assessment 3. Learners' Progress, Attainment and Development 4. Managing Teacher Performance and Professional Development 5. School Leadership and Management 6. Inclusion, Health and Safety 7. Productive Community Participation
Scale for Inspection and Evaluation	**A four-point grading scale for inspections to make the principal judgements:** Grade 1 – outstanding Grade 2 – good Grade 3 – requires improvement Grade 4 – inadequate.	**46 core standards are pronounced through descriptors across three levels in an incremental manner** For self and external-evaluation judgements are made against 46 core standards across the 7 Key Domains through descriptors and levels are given accordingly. Level-1 Level-2 Level-3 Subsequently, classification of performance are calculated on the basis of composite scores Very high, High, Moderate and Low

School Grading or Rating	• **Individual Schools are given Grade-I, II, III, IV through school inspection by HMIS**	**On the basis of the School Self Evaluation Report, composite scores are calculated to allocate performance levels-** School, Block, District, State and National Levels
School Inspection and Evaluation Reports	• OFSTED submits the report to the school and also uploads in the web portal	Schools and external evaluators keep all records with the schools and upload in the web portal
Inspection and Evaluation Reports Submission	• Submits report to Parliament	Reports are used by Ministry of Education, State Officials and Schools
Outcomes	• Inspection provides assurance to the public and to government that minimum standards of education, skills and childcare are being met; that – where relevant – public money is being spent well	**Allocation of levels and grading of all schools** • Making schools move towards performance improvement with accountability. • Making the system provide school specific support (National, State, District and Block levels) for improved learning outcomes

Part II: Higher Education

Introduction

Indian higher education system is the second largest system in the world after China. There are 37.4 million enrolled students in the HE system with GER of 26.3 — reflecting an increase in the social demand for higher education. Currently there are about 993 universities, 39,931 colleges and10,725 stand-alone institutions. Around 80.3 per cent of students in higher education are enrolled in 10 programmes out of approximately 187(AISHE 2019). More than three-fourths of the institutions and two-thirds of the enrolment are in private higher education institutions. The quality of such a vast, diversified and expanding system remains a challenge in India.

5.4 Policy Goal

The National Education Policy 2020 envisions to deliver quality higher education with equity and inclusion (NEP 2020, para 9.3, p. 34). Standard setting and accreditation in Higher Education are seen as significant instruments to achieve three policy goals, i.e., quality, self-governance and autonomy in higher education. The NEP 2020 envisages to set up a 'meta-accrediting body' called the National Accreditation Council (NAC) as one of the verticals of HECI. Accreditation will be carried out by accrediting institutions supervised and overseen by NAC. The task to function as recognised accreditors will be awarded to an appropriate number of institutions (NEP 2020, p.47).

The accreditation system is also envisioned to shift from graded CGPA score to a binary system (NEP 2020, para 18.4, p. 47). This shift is to be achieved over a period of fifteen years. To achieve this, the government aims to set up empowered bodies for standard setting and accreditation.

The NEP 2020 envisages to move away from granting accreditation scores to institutions to binary mode of accreditation to be carried out by NAC recognised accreditors.

5.5 Current Situation

In India accreditation is being increasingly acknowledged as a mandated quality assurance framework, linked with better governance of the HE sector and regulating public funding of HEIs.

There are varying models and practices of accreditation bodies across the world. In some cases, accreditation of HEIs is carried out by accreditation agencies which could be autonomous, independent and located in the private sector. The USA is an example of this model_as in the US, they could be autonomous but established by the federal government. In some countries the governments and the university come together to establish joint accreditation and quality enhancement boards. Involving HEIs in accreditation and quality enhancement, the decision making process enables self-regulation and improved accountability. The National Assessment and Accreditation Council (NAAC) in India is a public body but autonomous in its functioning.

The current accreditation system for HEIs in India consists primarily of NAAC which accredits institutions and NBA which accredits programmes. Although NAAC was established in 1994, a majority of universities and higher education institutions remain non-accredited. Initially, NAAC invited institutions to get accredited on voluntary basis. Only a few HEIs showed the inclination to get accredited. These HEIs perceive economic value as well as opportunity to build reputation through accreditation by a national level body,

thus asserting themselves as legitimate and reputed providers. Some institutions which have a culture of institutional improvement, approach accreditation as an endorsement of the quality of their programmes. Accreditation in Indian HEIs could entrench itself primarily through government mandate. Karnataka once established a state level quality assurance body, inspired by NAAC. Some state governments such as Haryana and Madhya Pradesh mandated their government colleges to get accredited. Since 2013, as the government linked accreditation as a mandatory requirement for RUSA funding, a rush by HEIs to get accredited has been observed. NAAC has, till recently, managed the institutional assessment and accreditation with a small number of faculty and a large number of experts identified across India and oriented for peer review visits.

NAAC awards only institutional accreditation. The need for programme accreditation in HEIs, similar to that done by NAB for technical courses, is also felt strongly amongst various stakeholders. The NEP 2020 envisages setting up of a National Accreditation Council (NAC) and several accreditation institutions to carry out accredition of the institutions.

5.6. New Accreditation Arrangements: Strategies for Implementation.

As said, the NEP 2020 envisages setting up of NAC and creating several accreditation institutions at the regional level.

5.6.1 *Setting up of the National Accreditation Council (NAC) by the Ministry of Education (MoE): Developing the Architecture*

NAC is one of the verticals of the HECI and is envisaged as the meta-accreditation body which will accredit the accreditors and hence help in developing the ecosystem of accreditors.

The existing NAAC and NBA could be absorbed into NAC. The existing quality assurance bodies and higher education councils could be incorporated as initial members of NAC. The modality of identifying the Head of the NAC and the members of the Board of Governance needs to be specified.

5.6.2 *Establishing Accreditor Recognition Policy through Collaborative Task Force*

The next step will be developing the guidelines for recognition of accreditors. NAC would be required to develop a recognition policy for accreditors. This may be facilitated by setting up a Task Force to streamline the processes and procedures for recognition of accreditors. Similarly, NAC could establish a Task Force consisting of its members, accrediting organisations and institutional leaders/Vice Chancellors from the central as well as state universities to discuss and decide how to assess the quality of accreditors. This first step would be the core of development of a credible accreditation ecosystem in India.

From time to time (every three years or so!), NAC would also be required to assess the changing nature and requirements of the higher education system — nationally as well as globally — and release guidelines for additional focus areas/aspects for accreditation institutions/agencies and HEIs. These areas may concern diversity and inclusion, improved teaching learning and such others.

The role of institutional accreditors could possibly be taken up by the State Councils of Higher Education or by state level quality assurance agency/cells, as have been set up and mandated by the State Higher Education Departments.

Programme accreditation could be undertaken by specialised agencies/bodies constituting boards with discipline/subject experts from HEIs as members; these should be known for research and teaching in a particular domain.

Whether private or not, non-profit organisations could be entrusted with clarification of the accreditation needs. In case private accreditors are permitted, NAC needs to develop a legal framework for recognising them as such.

NAC should aim to develop its accreditation agency recognition policy and guidelines, including the criteria for their monitoring and assessment by the end of 2021, and set it to start recognising the accreditors by the end of 2023. Over a period of time, NAC should aim at developing a database of accredited institutions and programmes. The database should be available in the public domain through NAC website for students, parents, funders, collaborators and other stakeholders.

Various stakeholders of the HE system should have access to the record of recognised accreditors as well as profile of accreditors showing the institutions and programmes accredited by them. Information on the website with ease of accessibility, retrieval and appropriate search functions can be useful. Also, an accreditor could devise awareness campaigns for various sets of stakeholders, especially students, through social media, newspaper advertisements, workshops and information/educational videos on their website/ social media channels.

5.6.3 *Scrutinising/Monitoring the Accrediting Organisations*

There must be a monitoring arrangement at the NAC level to ensure that procedures are followed and quality of accreditation is maintained.

As the accreditor of accreditors, the NAC would be required to devise guidelines and approaches for scrutinising and monitoring accrediting organisations. One approach is to focus on aspirational standards and on improving the academic quality as well as promoting accountability. NAC could look for evidence of what agencies are doing, as stated in accreditation recognition policy. The concern would be less about the process which the accreditation agencies follow.

The review/recognition done by independent accreditors is fundamentally different from the review and recognition done by the federal governments. Since there is a federal funding dimension associated with it, the government has to look for a reliable authority for use of federal money. Whilst the government focuses on the use of federal money, independent accreditor's concern is academic quality.

NAC, as proposed in NEP 2020, will be a public sector authority which will have the role of accrediting the accreditation agencies in order to achieve the policy goals of quality, self-governance and autonomy. It will be one of the proposed networks of new sectoral structures of HE governance, as mentioned in the NEP2020, and would therefore have to develop linkages, for example with the other verticals such as the funding body, i.e. the Higher Education Grants Council (HEGC) in the new set-up.

In highly developed higher education systems with a long history of standards checking, accrediting agencies are members of professional networks and their standards are mandated through the membership of their respective professional networks/associations. These professional associations are accredited by a central authority, an accreditor of accreditors, who could be a private sector entity or a public sector body. The professional networks are responsible for maintenance of standards by the accreditation institutions/ agencies.

The NAC has to keep encouraging accreditation agencies to form professional networks, whilst also devising standards for accreditation agencies. Gradual development of a nested network of accrediting organisations, accredited by NAC, could take place to ensure self-governance in the accreditation process.

5.6.4 *Process of Accreditation and Indicators of Institutional Assessment*

The accreditation agencies would be required to develop the accreditation process and the indicators of institutional and programming assessment for accreditation. To begin with, the existing indicator system, duration of accreditation cycle and process could be used which could be gradually phased out. An integrated system of institutional and programme assessment for autonomous colleges, research universities and teaching universities would have to be evolved or guidelines created by NAC.

Criteria have to be developed for identification of experts for institutional evaluation and visits, if required. NAC could develop these criteria, and review the previous criteria developed by the NAAC, in consultation with the accreditors.

Essentially, the process of accreditation consists of self-study report by the institutions and self-disclosure of information. The information is verified by an external assessor. Peer review team visits are organised by the assessor not only for verifying the claims made in the self-study reports but also for providing support to institutions in improving the quality of their programmes and institutions. Globally, peer review is considered an important component of accreditation.

Even when the focus of NEP2020 is on making the processes of accreditation faceless, increasing responsibility of institutions in self-disclosure of data/information and self-regulation, peer review could be helpful in supporting the concerned institutions in articulating their goals whilst putting institutional development plans (IDP) into action for improvement in institutional quality.

The existing process for institutional accreditation that has been followed by NAAC could be continued by the multiple accreditation agencies at the decentralised levels.

Internal quality assurance cells (IQACs) have an important role in maintaining and improving institutional quality at the institutional level.

In the emerging accreditation regime, it would be important for NAC to develop guidelines for accreditation agencies and institutions regarding harnessing the strengths of IQACs at the institutional level so that the new process of accreditation does not deteriorate to being yet another exercise in data generation for accreditation. How could NAC encourage quality culture in the HEIs? This is an issue to be discussed during the initial task force consultations of NAC.

A review of the existing accreditation criteria by NAAC and development of a set of new frameworks for accreditation for autonomous HEIs, research universities and teaching universities under the prevailing system of accreditation as well as under the emerging binary system of accreditation is needed. These criteria should also take into account the diversity of institutions and students.

5.6.5 *Preparing Institutions for the New Accreditation Regime*

Currently, the NAAC has a system of hand-holding institutions preparing for accreditation. The indicator system, manuals, standard operating protocols according to institution type is all aligned to prepare institutions for the accreditation process. Similar guidelines, manuals and support material would be required to be developed under the guidance of NAC, explaining the new system of accreditation, accreditors and standard protocols for the accreditation processes.

Conclusion

The initial few years, when the new system would be emerging and the existing system getting phased out would require active coordination between NAC and its members. Putting a policy in place, developing guidelines, building database of accreditors, programmes and institutions, and knowledge base, monitoring the accreditation agencies, and creating the grievance redressal procedures would all strengthen the NAC in establishing itself as a credible authority. This will increase the trust of students, parents, collaborators and funders in the accreditation system, and lead to improvements in institutional quality.

As stated earlier, the initial few years after the setting of NAC would be highly resource intensive — both in terms of team of experts, professionals and human resource as well as financial resources. Whether NAC could be run through a cost recovery business model is something which would require discussion — but without compromising on the equity and inclusion mandate of the NEP 2020. At the same time, a major challenge for the new accreditation regime would be to harness and promote the gains accrued from the years of work of NAAC in terms of institutional structures and procedures such as IQACs and quality cultures. Also, student voice and engagement of diverse HEIs in quality assessments has to be consciously incorporated.

CHAPTER

6

Teacher Management and Development

CHAPTER

6

Teacher Management and Development

6.1 Policy Goal

OVER the decades, the demand for quality schooling and quality teachers has continued to be the central policy concerns. Reiterating the centrality of teachers, New Education Policy 2020 envisions a "Life Cycle Approach" towards the teaching profession from entry to teacher education courses to recruitment, deployment, service conditions, continuing professional development and career management and progression. The policy aims to restore the status of teaching profession in order to inspire the best to enter the teaching force. While emphasising on service environment and culture of schools, the policy recommends a safe, inclusive and effective service environment in order to enhance the job efficiency of teachers. It further prescribes to minimise the engagement of teachers in non-teaching activities so that they focus on their teaching learning duties. Considering teacher as a lifelong learner, the policy proposes a framework for continuing professional development of teachers and principals, and emphasises on vertical mobility of teachers on the basis of merit and outstanding work. The need for National Professional Standards for Teachers has also been recommended for managing all aspects of teacher development.

6.2 Current Situation: Issues and Challenges

'Teacher' and 'Teaching Profession' have been a matter of concern over the last many decades. The emerging role of teachers, their pedagogical understanding, practices of teaching, their working context and relationship with educational stakeholders necessitate a careful understanding of the realities of teacher development and management and an examination of what we know about it. In spite of the desired importance given to the teaching community, the current situation is not in right shape. Therefore, NEP 2020 emphatically argues that the "quality of teacher recruitment, deployment, service conditions and empowerment is not what it should be and consequently the quality and motivation of teachers does not reach the desired standards." All commissions and committees have echoed the same concerns.

The current teaching force, at all levels of school education, is increasingly diversified in terms of tenure (regular and contractual), professional training (trained and untrained), salary (regular and contractual), etc. Currently, there are 9.5 million teachers across 1.55 million government, government aided and private unaided schools (UDISE 2018-19). Out of this, nearly 27 per cent of teachers are working in urban schools and about 73 per cent teachers are working in rural schools. The share of teachers working in elementary schools is nearly 59 per cent. The remaining 41 per cent of teachers are working in Secondary and Higher Secondary schools. The share of teachers working in government schools has declined from 57.6 per cent in 2014-15 to 52.5 per cent in 2018-19. On the other hand, the share of teachers working in private schools has increased from 30 per cent to 35 per cent during the same period. Even in absolute terms, the number of teachers in government schools has remained stagnant whereas there has been a huge increase in teachers in private schools. Nearly 85 per cent of teachers are professionally qualified and the remaining 15 per cent

require professional training. The share of professionally untrained teachers varies across the states, with there being a high concentration in the North-Eastern Region, West Bengal, etc. The share of female teachers in government schools is a little over 42.3 per cent where as in private schools, it is 59 per cent in 2016-17.

Recruitment, deployment, transfer and promotions continue as the major concerns over the decades. Regular appointment of teachers has been diluted by many states, leading to a large number of vacancies in many critical subject areas. The appointment of contractual teachers has in one way or another, adversely impacted the teacher management policy. The problem is further accentuated by the uneven distribution of teachers. The skewed distribution of teachers between the rural and urban areas is persisting as a major challenge. Transfer policy and service conditions of teachers have resulted in cumulative grievances and court cases. The career progression of school teachers is neither based on performance assessment of teachers nor aligned to the system's requirements, resulting in imbalances in teacher deployment. Further, the supply and demand for subject specific teachers is not aligned to teacher education, leading to oversupply of teachers in some subjects and deficit in others.

6.3 Implementation Strategies

In order to operationalise the policy pronouncements relating to teachers, the following implementation strategies are suggested.

6.3.1 *Teacher Management*

The emerging role of teachers, their development and management necessitate a careful policy analysis. The teacher management issue is a critical governance issue, especially for ensuring teacher rationalisation to meet the growing demand of school education sectors with equitable perspectives. The teacher management system often has to respond to the equitable deployment of teachers by region and schools, professional and general qualifications, standards, recruitment policy, promotion, transfer, conditions of service, incentives, evaluation etc. It occurs at various levels from system-wide policy-making and national decision-making to local education management.

The National Council of Teacher Education (NCTE) prescribes the minimum educational and professional qualifications for recruitment of school teachers. The recruitment of contract teachers is a dominant phenomenon across many states. Though the recruitment, deployment and transfer rules and regulations are in place, these rules are not followed meticulously. This is resulting in disorientation of teacher management issues. The following suggestive measures may be taken under the holistic framework of teacher management.

- States may prioritise and regularise the process of teacher recruitment to fill the backlog of teacher vacancies on an annual basis. The data/information of the sanctioned posts and vacant posts subject-wise, by state, district, block and school, should be available in the public domain. This will ensure transparency and a system for regular appointments of teachers.
- Recruitment processes for teachers need to be more rigorous to select a pool of committed and talented individuals in teaching profession. The recruitment process should be a combination of written test, interview and demonstration of teaching to assess one's pedagogic skills.
- The Teacher Eligibility Test for recruiting teachers needs to be more comprehensive in order to assess the cognitive, affective and skill domains of learning, including the subject's knowledge, aptitude for teaching, skills for managing classroom situations, understanding the learner in a psychological perspective, commitment and passion for teaching.

- Equitable deployment of teachers across schools should be ensured following the norms for appointment. Teachers working in remote rural and tribal areas may be financially incentivised.
- The transfer policy of teachers may be linked to rationalisation of teachers and the needs of schools. It should be transparent and beneficial to the system and schools. Transfers should occur only in very special circumstances and the process of transfers should be in an online mode in order to ensure transparency and avoid any kind of political interference.

6.3.2 *Teacher Management Information System (TMIS)*

A comprehensive web-based Teacher Management Information System (TMIS) will be developed on the guiding principles of the "Life Cycle Approach." The TMIS web-based platform would include information on all components of teacher management (Teacher profile-qualifications, deployment, transfer, career progression, rewards, punishment, etc.). The TMIS would cover all kinds of teachers including vocational, music, physical education and special educators; regular and contractual teachers working under all kinds of management; teachers working in all levels from pre-primary to Higher Secondary. This would help in ensuring transparency in institutionalising the teacher management system.

The potential of information technology may be used to improve efficiency as well as transparency in the management of teachers. NEP 2020 suggests development of a comprehensive web portal for the management of teachers. The web portal for management of teachers should be a comprehensive information repertoire on teachers and should enable administrators from the state to block level and school heads to draw relevant information to take decisions. The web portal may consist of different modules to enter and update data (in real time) and information about teachers, to provide reports to administrators working at the state, district and block levels, and to school heads, to provide information about teachers as part of public disclosure. Teachers should be able to access web portal for their equipment, to make applications, and to submit representations with regard to their service and grievances. Access to web portal should be layered for different users and password protected.

The following information about teachers may be collected and updated from time to time:

- Demographic information: This includes the date of birth, gender, social and religious background, disability status, family member information, etc.
- Educational information: educational and professional qualifications, qualifications acquired during the service, any special training (like CWSN, ICT, etc.).
- Service: Date of joining the service, whether qualified TET or not, mode of recruitment (written test and/or interview at district or state level, merit, promotion, etc), nature of recruitment and position for which recruitment took place (like JBT, TGT, etc, Sanskrit Pandit, etc.) subject specialisation, possession of any special knowledge or skill, promotions, recipient of any rewards/punishments, deputation to other schools, and for administrative position within education department, assigned any non-educational duties, attendance trends during the last couple of years, etc.
- Training: Deputation for training at the block, district, state and national levels, subject area of training, number of days of training, etc.
- Leave record: Number of leaves availed by type and number of days, number of leaves by category not utilised, etc.

- Transfer record: School at present working in and schools worked previously, transfer with year, reason for transfer, whether eligible/liable to transfer, etc.
- Salary and other financial record: salary with all other allowances, bonus, increment date, loans availing, bank account number, etc.
- Others: Any other auxiliary information that may be required.

All teachers and schools may be given a unique code in order to specify the schools where a particular teacher is at present working and where he has previously worked, so that teacher career and transfers can be reconstructed. Seeding of school code enables linkages with school-wise database. This web portal can be used in management of teachers like rationalisation of teachers, transfer of teachers (at request or as administrative prerogative), deputation of teachers for training, granting of leave, release of salary and reimbursement of TA and other claims, etc. A separate module for each of these administrative functions may be developed and password protected access may be given to the concerned administrators. Further, a module for teachers to make requests (for example, for transfer to a place of their choice), appeals, and grievances may be developed and password protected access may be given to the concerned teachers. It should be ensured that each grievance is disposed within a specified time through the web portal.

The web portal may go a long way in both, improving efficiency and transparency in the management of teachers. Certain states in India have a teacher management information system such as Karnataka, Madhya Pradesh, and Haryana etc.

6.3.3 *A Model Framework for Teacher Rationalisation*

Teacher management, encompassing the teachers' initial recruitment and deployment, transfer and rationalisation, needs to be seen in a holistic perspective, as one having interlinkages with other aspects of management and administration of school education. It is frequently noted that the distribution of teachers across schools, blocks and even districts is uneven, such that certain schools have inadequate teachers and other schools with surplus teachers. The teacher-pupil ratio is found to be sub-optimal and at variance with existing norms at school, block and district levels. Further distribution of subject-wise teachers is also uneven. This creates an artificial scarcity of teachers at places. Redistribution of teachers from surplus to deficit schools or rationalisation of teachers is likely to ameliorate the scarcity of teachers to some extent.

It may be noted that school size, particularly of public funded schools in terms of enrolment, has been shrinking over years for a variety of reasons, including a decline in child population, and expansion of private sector in education. This has led to a large number of unviable schools not only in terms of economies of scale, but also in terms of pedagogy, transaction of teaching-learning material and peer to peer interaction. A critical mass of students and teachers is necessary to transact curricular material meaningfully and foster peer interaction. Therefore, making schools viable has emerged as a policy imperative. Measures like closure, merger of schools or rationalisation of schools have been adopted by several states in order to cope with the shrinking size of schools. The NEP 2020 further suggests school complexes as a way of addressing the shortage of teachers, particularly subject teachers. Thus, the rationalisation of teachers cannot happen in isolation but can only happen in sync with rationalisation of schools, establishment of school complexes. Further, teacher transfer policy also needs to be made in sync with rationalisation of teachers, rationalisation of schools, and establishment of school complexes.

Therefore, a "Model Framework for Teacher Rationalisation" needs to be developed, based on available data and existing norms, regarding teacher requirements (subject specific teachers, arts, physical education and vocational education teachers) by each level of education. The model framework for teacher rationalisation encompasses recruitment, deployment, redeployment, and transfer etc., so as to ensure that all schools have adequate number of teachers as per the norms. It necessitates revisiting state norms for teachers in schools/ school complexes. The model framework can be used to identify the scope for rationalisation in school complexes/clusters, and at the district and state levels. The norms for teacher requirements by each stage of school education and school complex for sharing of teachers will be revisited and developed. Teacher requirement by subject specialisation will be projected up to 2030 based on child population and enrolment trends. Further, supply of teachers needs to be estimated on the basis of the number of teacher education institutions and their intakes. The structural reforms proposed in teacher education needs to be taken into consideration while projecting supply of teachers.

6.3.4 *Development of Teacher Professional Standards*

The New Education Policy 2020 has proposed to develop a comprehensive National Professional Standards for Teachers (NPST) to be developed by 2022, encompassing all levels of school education by subject and other criteria. The professional standards for teachers would be developed by analysing the teachers' professional standards of other countries, in consultation with the stakeholders, teacher unions and others.

Teachers' professional standards provide a policy mechanism to regulate the profession and enhance its status. A key policy consideration involves the use of professional standards as tools for extending professional learning and/or for credentialing and appraisal. Standards provide the basis for providing a benchmark of what are the minimum levels of achievement in various aspects of their practices. A standard usually refers to what teachers or educators are expected to know and be able to do. Professional standards can also be seen as policy tools, in that their purpose is to achieve certain policy objectives, in particular to regulate the teachers' professional learning and practice throughout their career.

One of the main purposes of teacher professional standards is quality control and is used as quality assurance tools in many countries. The objective of these standards is to support the continuous growth and development of each teacher by monitoring, analysing, and applying the pertinent data compiled within a system of meaningful feedback. The standards also can assist teachers in reflecting on their teaching practice and its impact on student learning. The teachers also get an opportunity to set individual goals and plan their improvement plans and professional needs.

Some of the common shared standards are professional knowledge and understanding; professional practice; professional engagement and field experiences. Most of the developed countries have in place the professional standards, expected from teachers, as an integral part of the education system. However, most of the developing countries are currently striving towards the process of developing such frameworks in order to enhance teacher quality and learning outcomes.

The professional standards are used for enhancing professional judgement and actions, enriching comprehensive in-depth knowledge, providing common criteria to assess the teachers' progress, providing a basis to be self-evaluative in order to monitor and assess the progress towards desired benchmarks, promoting equity and inclusiveness in the approach of education professionals, bringing coherence in synergising professional evaluation, training and development, and a professional understanding of monitoring and assessment.

6.3.5 *Service Environment and Culture*

The core concern of re-evaluation of the service environment and culture for teachers is to amplify their ability to teach effectively. The quality-of-service culture and environment ultimately depends on an appropriate balance between job demands and the resources available to meet those demands. An amicable service environment and culture is required for teachers to effectively raise and manage their performance levels. The elements required for providing teachers an amicable service culture and environment are:

Work autonomy: Professional work entails sufficient autonomy to make decisions on teaching leaning process and overall management of schools. Furthermore, decision-making on issues concerning the classroom is partly associated with job satisfaction.

Quality of working relationships: The level of collaboration and support from teachers has also been shown to be associated with the teachers' overall job satisfaction. Supportive and collaborative professional relationships among teachers and management staff can also have an impact on the quality of teachers 'professional practices.'

Support and resources: For teachers to respond appropriately and in a timely manner to the demands that they face daily, they need adequate physical support and the co-operation of all stakeholders. Physical and psychological safety of teachers is crucial for their professional duties.

Time pressure and workload: Workload generally refers to the overburden caused by tasks above and beyond regular teaching duties. There is a need to streamline the working hours of not only teaching but of planning the lessons, collaborating for academic purposes with other teachers, staff meetings etc. Accordingly, assessing students, preparing lessons, correcting students' work, in-service training and staff meetings should also be taken into account when analysing the demands placed on teachers.

No deployment in non-teaching activities: Teachers are formally required to work a specified total number of hours per week to earn their full-time salary, including teaching and non-teaching time, as stipulated in collective and other such agreements. Non-teaching tasks are a part of teachers' workload and working conditions. These are non-teaching activities, required by legislation, regulations or agreements between stakeholders. There is a requirement to streamline the non-teaching tasks so that teachers can devote their time and focus mostly on the teaching and learning activities.

In this regard, the NEP 2020 proposed that adequate infrastructure is required in schools to make the service conditions better at teachers' workplace. State governments can adopt innovative approaches such as rationalising school complexes, effectively managing school governance, etc., in order to build vibrant teaching communities. Teachers are not supposed to be engaged in non-teaching activities, in particular the administrative tasks so that they may fully concentrate on their teaching-learning duties. More autonomy is to be granted to teachers to choose the teaching pedagogy, suitable for effective teaching. There is also the need to accord recognition to the teachers for their novel approach and performance which improve the learning outcomes in a classroom. To help ensure that schools have positive learning environments, the role and expectations of principals and teachers must include the development of a caring and inclusive culture in their schools for effective learning and the benefit of all stakeholders.

Absenteeism among teachers is a serious issue and calls for the attention from policy makers. Teachers may be absent from the school due to various reasons including personal or departmental as well as due to the demands made on their time for performing duties for other departments. Frequent deployment of teachers in various non-teaching activities cuts down their time for planning and preparing the lessons, and actual instruction time in the classroom. Teachers, headmasters and parents have expressed grave concern

over the teachers' involvement in election duty. Teachers are deputed as booth level officers which is a continuous activity throughout the year and results in the long absence of teachers from teaching activities. To a certain extent, it is also responsible for adversely affecting the learning outcomes and academic environment. Teachers should not be involved in activities required by other departments, especially activities like migration surveys, cattle surveys, caste surveys as these activities have nothing to do with the school, students and the teaching-learning process. Clear definition of teaching and non-teaching activities may be given by MHRD to be used by the states. There should be enough support mechanism at school level to deal with non-teaching activities which do not require any academic input. This would facilitate teachers to focus more on teaching.

In addition to this, to create a culture of innovation and motivation among teaching fraternity, academic freedom should be provided to the teachers to encourage innovation so that they may freely use pedagogy and material of their own choice to transact the curriculum. In this endeavour, they should be facilitated and supported by the administrators. Talented teachers need to be recognised and awarded for their innovations in teaching to boost their confidence and motivation.

In order to ensure a safe, inclusive and effective learning environment, "A Package of Training Modules/ Guidelines" needs to be developed for teachers and teacher educators to facilitate school improvement processes. The modules would cover Quality and Usability of Physical Resources School Safety, Health and Well-Being, Maintaining Hygiene, Building Open and Inclusive Environment, Participatory Based School Based Governance and Teacher Autonomy. Accordingly, capacity building programme needs to be carved out for online and blended courses.

6.3.6 *Continuing Professional Development of Teachers*

Continuing professional development of teachers is a significant aspect for the betterment of schooling. Continuing professional development is the process of formal in-service training to upgrade the content knowledge and pedagogical skills of teachers, and it is widely viewed as an important means of improving the practice of teaching and learning. The major objectives of continuing professional development of teachers include updating individual's knowledge, skills and attitudes in the light of development of new techniques and curriculum, enabling teachers to apply changes made in curricula to their teaching practice, enable schools to apply new strategies for teachers' development and help weaker teachers to become more effective. Continuing professional development also contributes immensely to the self-reflection and self-assessment of teachers. This process allows the creation of conditions for lifelong learning for all, and provides opportunities for acquisition or renewal of basic knowledge and skills.

Certain factors contribute to continuing professional development, such as resolving contradictions at work; sharing cognitive models; increasing interaction about work; support of management and teachers; modality of training; strengthening of school culture, offering intellectual stimulation.

The professional development framework includes in-depth subject specific knowledge, training in planning lessons and courses, understanding the learners, managing the available resources, taking responsibility for self-assessment and development, use of inclusive practices and promotion of 21stcentury skills.

In the Indian context, problems begin with the perceptions about Continuing Professional Development (CPD). Different agencies and stakeholders seem to hold different or narrow views of CPD. It is very common to see CPD equated with in-service training programmes, which are normally one-off, isolated, short-term and infrequent training events. Teachers, too, seem to perceive CPD in terms of formal in-service programmes designed and delivered by external agencies.

Some of the ways in which continuing professional development of teachers can be enhanced is by offering multiple modes of improvement such as professional workshops at regional, local, national or international levels. The NEP 2020 proposes platforms for the teachers to share the best practices and information hitherto in existence. 50 hours of CPD opportunities every year will be given to teachers in their own interest area.

While discussing the continuing professional development of teachers, it is also imperative to explore the Career Management and Progression (CMP) approaches. In this regard, implementation of rigorous teacher evaluation systems represents a long-term investment in a more productive workforce, and may support the development and adoption of new practices in talent management and career development.

Teachers performing well in their areas must be accorded recognition and provided with incentive to motivate the others of the teaching community. A robust merit-based structure is also suggested by the NEP 2020, to be established at each level of teaching. Parameters for assessment and mentoring of performance will be developed by States and UTs for effectively analysing the career management and progression of teachers.

Way Forward

The role of teachers in shaping the future of our children and our nation can be ensured only if reforms in teacher development and management are effectively implemented. In this regard, a teacher management framework, along with a web-based teacher management information system, needs to be developed in consultation with all the states. Similarly, a teacher rationalisation model framework for equitable distribution of teachers across all schools as per norms needs to be developed and shared with the states.

CHAPTER

7

Operationalisation of Multidisciplinary Universities and HEI Clusters

CHAPTER 7

Operationalisation of Multidisciplinary Universities and HEI Clusters

Background

INDIA's higher education system is predominantly an affiliating system in which postgraduate departments are constituent units of the university and undergraduate teaching takes place in a large number of colleges affiliated to the university. More than 90 per cent of enrolment in higher education is accounted for by the colleges affiliated to universities. It is often observed that the university has not been in a position to provide academic leadership to their affiliated colleges because of the large number of colleges affiliated to each university. Further, the types of colleges also vary – there are multi-disciplinary colleges, mono-disciplinary colleges, and a large number of private colleges. Many deemed universities and institutions of national importance, too, are restricted to a few disciplines. National Education Policy 2020 recommends multidisciplinary universities and colleges in place of an affiliating university system.

7.1 Policy Proposal

"Moving to large multidisciplinary universities and HEI clusters is thus the highest recommendation of this policy regarding the structure of higher education. The definition of university will thus allow a spectrum of institutions: research-intensive universities, teaching-intensive universities and autonomous degree-granting colleges (AC) with a large multidisciplinary institution" (pp. 34-35). By 2040,all Higher Education Institutions (HEIs) shall aim to become multidisciplinary institutions and shall aim to have larger student enrolments, preferably in the thousands, for optimal use of their infrastructure and resources, and for the creation of vibrant multidisciplinary communities. Since this process will take time, all HEIs will first plan to become multidisciplinary by 2030, and then gradually increase student strength to the desired levels.

The NEP 2020 states that professional, vocational and distance education will be integrated into one higher education system of multidisciplinary institutions. There are three major proposals regarding multidisciplinary education in HE. One is to convert the existing institutions into multi-disciplinary institutions – research universities, teaching universities and multidisciplinary autonomous colleges. Second is to build a world class multidisciplinary HEIs called Multidisciplinary Education and Research University (MERU). Third is to build the Higher Education Clusters, forming a multidisciplinary university, as envisaged in NEP 2020.

Besides, the policy notes the gradual phasing out of affiliated colleges over a period of 15 years through a system of mentoring and achieving minimum benchmarks in academic and curricular matters; teaching and assessment governance reforms; financial robustness; and administrative efficiency.

There is a further implication of multidisciplinary institutions. Besides, being multidisciplinary, institutions shall restructure the pedagogy, allowing larger choices of subjects to students. The flexibility of curricular choice shall be an important element of the restructuring of pedagogy.

7.2 Implementation Strategies

7.2.1 *Operationalising the Multidisciplinary Institutions (MI)*

A Multidisciplinary Institution (MI) is an institution where courses are offered and research is carried out in all disciplines and streams such as science, technology, social science, humanities, professional disciplines and vocational education under a single institutional framework and governance and management. It is intended to provide holistic and multidisciplinary competencies for students by promoting flexibility to choose courses from diverse disciplines according to their interest and to promote research beyond the rigid boundaries set by disciplines.

Multidisciplinary education is an academic and pedagogical approach to develop multiple capacities in the intellectual, aesthetic, social, physical, emotional, and moral domains, among the students inside and outside the classroom, by integrating formal and informal learning opportunities and teaching, research and community engagements and promoting cross-disciplinary and interdisciplinary perspectives and academic practice.

The NEP 2020 envisages three types of higher education institutions in the future: a) Research Intensive Universities (RIs); b) Teaching Intensive Universities (TUs); and c) Autonomous Colleges (ACs). The strategies for transforming each of these categories of institutions may vary from Research Intensive Universities (RU) and Teaching Intensive Universities (TUs).

A first step may be to identify, institution having potential to become MI in the immediate future. The methodology to identify such institutions needs to be developed. While Accreditation reports and NIRF ranking can be useful in this process of identification, they do not cover all the institutions. Therefore, there is the need to map out institutions to be considered on a priority basis. This also needs to be linked with the idea of institutional consolidation.

One way of moving forward is to consider the top ranked institutions under the NIRF for transformation into multi-disciplinary institutions. It may not be surprising to find that many of these institutions are already having multi-disciplinary departments. In such cases, the concern is more to expand the scope of multi-disciplinary approaches in these institutions.

Let us consider the research universities. There are four types of RUs: a) Institutes of National Importance (INIs) which are also known as Centrally Funded Institutions (CFI); b) UGC funded Institutions (UFIs); c) State Universities; d) Private Universities. There are 82 CFIs including 16 IITs, 31 NITs and 13 IIMs. Considering the classification which the policy promotes, funding for CFIs and UFIs can brought under one funding agency.

Expansion of state universities requires rigorous financial support from state governments. This may necessitate a state to develop a State HE Development Plan (SHEDP). Existing bodies like the State Higher Education Council (SHEC) may be entrusted to develop SHEDP. Existing specialised universities such as technical universities or health universities which have a pan-state jurisdiction may be dissolved, and their staff and facilities may be reallocated to other universities. Colleges affiliated to such universities may be reattached to their original parent universities before they gradually emerge as autonomous colleges.

There are 135 institutions of national importance. Many of them offer courses in a limited number of disciplines. This is more so in case of the institutions offering engineering and technology subject areas. All the Institutions of National Importance may be requested to prepare an Institutional Development Plan

with a coverage of at least 10-15 disciplines. This transition may take 10-15 years. Many of the private universities have broad disciplinary orientation. Many of them offer courses in engineering or management sciences. However, many of the private universities offer courses which are more market oriented and rarely offer courses in many disciplines in arts, humanities, literature, history, oriental studies, etc. These universities may be requested to introduce courses in broad subject areas in addition to the courses offered by them at present.

Strategies

Based on funding and management, there are broadly three types of colleges in the country: a) Government Colleges (State funded/Centre funded); b) Aided Colleges; and c) Private Unaided Colleges.

Government funded colleges require developing IDPs with a plan for expansion and assured funding to transit to MIs. Constituent colleges are part of and under the jurisdiction of parent universities. If we consider university as a unit, some of those universities are already MIs. This may not be the case if we consider colleges as units. For instance, all constituent colleges of Patna University, taken together, present an ideal example of MI. At present, constituent colleges are all stand-alone constituent colleges. Patna University may truly become an MI if it designs curricula to allow for multidisciplinary choices to students which do not exist at present.

Aided colleges may require more financial resources to develop infrastructure facilities in order to move to become MIs. There may be aided colleges which are autonomous or high in NIRF ranking which have the potential to become MIs. A major concern is whether or not aided colleges are willing to invest in capital assets to transform themselves into MIs.

Most of the unaided colleges offer courses in the technical and professional subject areas and are concentrated in selected urban locations. They offer employment-oriented courses to attract students and they earn their income mainly from student fees. It is difficult for those institutions to offer humanities, science and social science courses, as the demand for these courses at the on-going fee levels will be low.

7.2.2 *Transition from Affiliating System to Large MIs*

NEP 2020 suggeststhat the colleges will be "gradually phasing out the system of 'affiliated colleges' over a period of fifteen years" (p.36), i.e. by 2035. (i) The phasing out of the system of 'affiliated colleges' shall be supported by the mentoring of the affiliated colleges by the respective affiliating university. (ii) A suggestion to achieve minimum benchmarks is made in the five areas such as academic and curricular matters; teaching and assessment; governance reforms; financial robustness; and administrative efficiency. (iii) Whether colleges have achieved minimum benchmarks over time shall be ascertained by securing the prescribed accreditation benchmarks. (iv) Colleges having obtained the minimum benchmarks ascertained through the accreditation, under graded accreditation and graded autonomy, "will aim to become independent self-governing institutions pursuing innovation and excellence" (p. 49).

The empirical reality even in the colleges under Delhi University is different.(See Table 1.) Overall, the average number of department in Delhi University colleges is 14, the highest average number of departments being in the Central Government category of management. The average number of teachers in Delhi University Colleges is 111. The average no. of students in Delhi University colleges is 2618, the highest average being in the Central Government managed colleges.

TABLE 1
Delhi University Colleges by Management and Accreditation

Management Type	No. of Colleges	No. of Accredited Colleges	Average No. of Departments	Average No. of Teachers	Average No. of Students
Central Government	19	13	18	129	2846
State Government	18	11	11	92	2335
University Colleges	29	23	13	109	2594
Private Aided	10	8	12	111	2789
All DU Colleges	76	55	14	111	2618

Source: AISHE, 2019-20, MHRD, Government of India.

What is not easily noticed is that there are colleges with 1 department and 12 teachers and 115 students. Further, there are 16 colleges which are single discipline colleges such as Medical, Dental, Physically handicapped, Ayurveda, Nursing, Home economics and Business Studies institutes. For multidisciplinary research and teaching purposes, single discipline colleges will have to be merged with the university.

General Issues

- We need to distinguish MIs for UG colleges from MIs for PG colleges. Once multidisciplinary competencies are developed at UG level, PG may emphasise on specialised learning and learning the field of interdisciplinary areas.
- It may be comparatively easy for engineering and science colleges to introduce humanities and social science courses. However, it may be difficult for Arts colleges to introduce professional and technical subject areas, given the heavy investments required.
- There are stand-alone institutions which offer Diploma and Certificate courses in technical streams (vocational education). There is a need to explore how these institution will evolve when all institutions move to become MIs.

ANNEX 1

Number of Broad Disciplines in Private Universities

Private Universities	No. of broad disciplines in which courses are offered
Ganpat University, Ganpat Vidyanagar, Kherva	2
Dhirubhai Ambani Institute of Information & Communication Technology, Gandhi Nagar	3
Jaypee University of Information Technology, Waknaghat, Solan	3
Charotar University of Science & Technology, Anand	5
Dharmsinh Desai Univeristy, Nadiad	5
Baddi University of Emerging Sciences and Technology, Baddi (Makhnumajra), Solan	6
Ahmedabad University	7
The Northcap University, Gurgaon	7
Chitkara University, KaluJhanda (Barotiwala), Solan	7
Indus International University, Bathu, Una	7
Pandit Deendayal Petroleum University, Gandhi Nagar	8
O P Jindal Global University, Sonipat	8
Navrachana University	9
Apeejay Satya University, Sohna	9
Kadi Sarva Vishwavidyalaya, Gandhinagar	13
Amity University, Haryana, Gurgaon	13
Assam Don Bosco University, Guwahati	14
MATS University, Raipur	15
Sabarmati University	15
Dr C V Raman University, Kota Bilaspur	16
Eternal University, Baru Sahib Sirmour	16

Source: Calculated from AISHE 2019-20, MHRD, Unit Level Data

CHAPTER

8

Institutional Development Plans in Higher Education

CHAPTER 8

Institutional Development Plans in Higher Education

8.1 Policy Goal

THE National Education Policy 2020 (NEP 2020) envisages an Institutional Development Plan (IDP) that will serve as a vision document to guide the institutional transformation. The IDP will guide the academic programmes as well as human resource management, and will ensure transparent and responsible governance, upgradation of quality and equity by ensuring the participation of socially and economically disadvantaged groups. The IDP will also help in resource mobilisation.

The NEP 2020 notes that "Each institution will make a Strategic Institutional Development Plan on the basis of which institutions will develop initiatives, assess their own progress, and reach the goals set therein, which could then become the basis for further public funding. The IDP will be prepared with the joint participation of Board members, institutional leaders, faculty, students, and staff" (p.50).

The Institutional Plans should be aligned with the national and state goals, and prepared to optimally utilise the resources, by reorganising and innovating them. All HEIs must have an institutional development plan to re-energise the faculty and for the administration to achieve the intended objectives. Therefore, it is necessary that all institutions prepare an effective plan.

In a diversified system of higher education institutions, the IDP is bound to vary in terms of vision, mission, goals and targets, levels of multi-disciplinarity to be achieved, self-governance, academic plan, human resource management, student support system and financial plan. For example, there are single or multiple discipline colleges affiliated to a university. At the other extreme, there are IITs and NITs. The private and deemed universities may have strategies different from public funded state universities. The strategic plan will vary considerably in different cases.

8.2 Implementation Strategies

Every institution will develop the IDP through a participative process in which management, faculty, administration as well as students have important roles. Head of the institution can initiate the process after obtaining the approval from the managing body of the institution. The methodology of developing an IDP will involve the following steps:

Status and Diagnosis of the Institution

- Setting targets
- Evolving strategies
- Governance

- Academic programme
- Human Resource Management
- Student support system
- Physical and technological infrastructure
- Financial plan
- Monitoring and review

8.2.1 *Status and Diagnosis of the Institution*

A baseline assessment is an important step for any institution to understand its potential. This helps to establish a reference point from where strategic change can be initiated to achieve a desired goal in a certain period. The broad parameters of baseline assessment will include the following: (i) Student composition by social category, gender, department, level of programmes and course, (ii) Teachers strength by qualification, department, level of programmes, (iii) Course offered and credit requirements, (iv) Multidisciplinary curricular options in courses, (v) Students' achievement survey, (vi) Governance structure in terms of organ and committees and level of autonomy, participation, decentralisation, (vii) Teaching load of teachers by credits taught and research output and other academic innovation, (viii) Teacher vacancy, recruitment, promotion and professional development, (ix) Student support system – IT, library, laboratory, hostel, banking, transport, canteen, drinking water, toilets, student council, etc., (x) Sources of revenue and expenditure by different heads. The above templates are only suggestive and are subject to change. In a baseline assessment, quantitative information, as per the suggested format, will provide sufficient data to diagnose the health of an institution by means of various indicators such as student teacher ratio, pass percentages, multidisciplinary potentials, capacity of self-governance, teachers' teaching load and research output, infrastructure support and financial status of an institution. This information will help to make a strategy for change as per the goals and target in the plan.

SWOC: A Diagnostic Tool

A baseline assessment may further lead to the diagnosis of the institution in terms of a Strengths, Weaknesses, Opportunities and Challenges (SWOC) analysis. The analysis will help the institution to develop various strategies of planning for change in which an institution can build upon the strengths and exploit the opportunities for development and minimise the internal weaknesses and challenges emanating from external environment. As opposed to baseline assessment which yields quantitative information, the SWOC analysis presents a qualitative understanding of the institution.

SWOC has four components:

Strengths: The strength of an educational institution may lie in its brand name, reputation, the courses it offers, the size, the location and accessibility, faculty, good administration, infrastructure, output, support services, culture, tuition fees and cost of education, alumni, etc. Accreditation and ranking is another option one should consider when conducting a SWOC analysis of an educational institution. The information for this section should be particular to the institution.

Weaknesses: The weaknesses of an institution may include inadequate faculty members, inadequate educational resources such as library and laboratory facilities, poor output, poor infrastructure facilities, poor management of the infrastructure facilities, funding issues, lack of degree programmes, ineffective

leadership, lack of campus life, or other surrounding activities. In other words, the weaknesses can be the opposite of the strengths. It is also good to look at the organisation as a whole when conducting the SWOC analysis of an educational institution.

Opportunities: Opportunities are the external factors that are expected to have a positive effect on achieving the institutes' objectives, or goals not earlier considered. Furthermore, opportunities are generally what may benefit an educational institution either in the present or the future. Educational institutes can often leverage their reputations and faculty members into these opportunities. In some cases, opportunities change over time, making this strategy both competitive and limited in its focus. The school may grow due to resource use for programmes specific to the university's locations or establishment of leadership in a particular area as well.

Challenges: These are considered by many as external factors and circumstances that are likely to have a negative effect on achieving the institute's aims, or making the objective redundant or unachievable. Challenges in the SWOC analysis may be the shortest section though most important to many educational institutions. Generally, challenges can be reduced relating to funding, leaving the institution by the faculty members for other opportunities, political influence in the appointment of prospective faculty, competition from both traditional and online educational institutions. It is also felt that larger institutions may not have as much worries regarding threats if they have well-established brands.

SWOC Analysis Matrix

First, we need to draw up a SWOC Analysis matrix, or any standard template. This is a 2x2 grid, with one square for each of the four aspects of SWOC. Table 1 shows what it should look like.

TABLE 1
A SWOC Analysis Matrix (For Developing IDP of the Higher Education Institutes)

Strengths	Weaknesses
Opportunities	**Challenges**

SWOC Analysis for Developing IDP

For developing the IDP, SWOC analysis will be used as a mechanism to evaluate the strengths, weaknesses, opportunities and challenges of institutions, as it is an effective way to understand the situation of higher education institutions. Before starting the process, one needs to have clear objective or goal for what the SWOC has to perform. Keeping in view the vision of the NEP, an institution needs to identify its goal and objectives. Having specified its goals and objectives, the institution focuses on how to attain them in its current situation. For example, a SWOC analysis can be done for an institution to move towards a more multidisciplinary undergraduate as well as it guides to take further action for improvements. For this purpose, SWOC will explore the principal external macro-trends and internal micro-trends likely to influence

the institution and its programmes. The external scan looks at opportunities and threats; the internal assessment, at strengths and weaknesses.

8.2.2 *Setting Targets*

The target of each institution will vary depending upon its aspiration to become a research university/ teaching university/autonomous college. Target setting in a research university will focus on research initiatives and maximisation of research output in terms of patents, publications and citations with impact factor, awards, and evolving a culture of research.

A teaching university will focus on excellence in the teaching-learning processes, through improved pedagogies, curriculum, evaluation and learning outcomes, and evolve a culture of improved teaching, for reducing the wastage and stagnation among students.

An autonomous college will focus on under-graduate teaching, through improved pedagogies, mentoring, tutoring, and counselling, as this is the bedrock for higher education.

What is important in each of these cases is to clearly specify the targets in quantifiable and measurable terms so that monitoring the progress towards achieving the targets becomes objectively verifiable.

8.2.3 *Evolving Strategies to Meet the Targets*

Some of the strategies for meeting the set targets of a research university could be: to create facilities for research, to allocate resources to carry out the research activities (libraries, laboratories and fieldwork), to introduce incentives for patents and quality publications and to create networks for research, including conferences, seminars, and colloquiums.

Some of the strategies for meeting the set targets of a teaching university could be: setting up of teaching-learning centres; faculty development programmes; subject-based networks and repositories (both real and digital); subject-specific classrooms, internship opportunities; infrastructure for online interface between teachers and scholars; open and distance learning and technology platforms for enhanced teaching and learning.

Some of the strategies for meeting the set targets of an autonomous college could be: to modify curriculum for holistic learning; to widen the choices through enhanced CBCS and improve employability; to launch mentorship programmes and career counselling for catching them young, at the college level; campus development; community engagement and internship.

Many institutions of higher education are single-discipline institutions. IDPs of these institutions need to contain strategies to transform themselves into multi-disciplinary institutions. The IDP should indicate a time frame in which disciplines and departments will be added, teachers will be recruited and students will be admitted to multidisciplinary courses.

8.2.4 *Governance Structures and Processes*

NEP 2020 also talks about self-governance of higher education institutions by professionals and academic experts. Each institution will establish its own Board of Governors (BoG) from among a group of highly qualified, competent, and dedicated professionals. The BoG of an institution will ensure autonomy of the institution free of any external interference in matters pertaining to all appointments including that of head of the institution, and all decisions regarding governance.

The process of constitution of the BoG and representation of diverse stakeholders should become part of the IDP. The BoG will be responsible and accountable to the stakeholders through transparent self-disclosures of all relevant records. It will be responsible for meeting all regulatory guidelines mandated by HECI through the National Higher Education Regulatory Council (NHERC) (p.48).

8.2.5 *Academic Programme*

Academic plan is one of the important components of IDP. NEP 2020 visualises many changes in courses, curricula, teaching methods, assessments, degree structure, credit transfer, multiple entry and exit, outcome-based education, teaching and research excellence for achieving the high quality in higher education institutions. The academic plan should provide a detailed understanding of above components. The NEP notes that "Flexibility in curriculum and novel and engaging course options" will be provided to the students. It further adds, "The curriculum must be interesting and relevant, and updated regularly to align with the latest knowledge requirements and to meet specified learning outcomes" (p. 38). On assessment system it notes that "HEIs shall move to a criterion-based grading system that assesses student achievement based on the learning goals for each programme, making the system fairer and outcomes more comparable. HEIs also move away from high-stakes examinations towards more continuous and comprehensive evaluation" (p.38).

NEP 2020 advocates changes in degree structure in most comprehensive way. "The undergraduate degree will be of either 3- or 4-year duration, with multiple exit options within this period, with appropriate certifications, e.g., a certificate after completing 1 year in a discipline or field including vocational and professional areas, or a diploma after 2 years of study, or a Bachelor's degree after a 3-year programme. The 4-year multidisciplinary Bachelor's programme, however, will be the preferred option. HEIs will have the flexibility to offer different designs of Master's programmes: (a) there may be a 2-year programme with the second year devoted entirely to research for those who have completed the 3-year Bachelor's programme; (b) for students completing a 4-year Bachelor's programme with Research, there could be a 1-year Master's programme; and (c) there may be an integrated 5-year Bachelor's/Master's programme. Undertaking a Ph.D. shall require either a Master's degree or a 4-year Bachelor's degree with Research. The M.Phil. Programme will be discontinued" (pp.37-38). The academic plan of an institution will contain all the details on the restructuring of degree programme.

Choice based credit system is envisaged to be revamped where curricular choice of students will be broadened and assessment will be based on achieving the goals of learning. Expected learning outcomes for higher education programmes, also referred to as 'graduate attributes' will be facilitated with appropriate pedagogy. The academic plan will make for effective learning outcome-based education.

Besides, the academic plan will contain the ways and means of achieving teaching and research excellence by providing opportunities for research, participation in seminars and conferences. The academic collaboration between institutions within India and abroad will be promoted.

8.2.6 *Human Resource Management*

Human resource management (HRM) is a major concern in many institutions of higher education. Many teaching positions remain vacant in most institutions for a long period of time. The initial steps to improve the institutional performance will be to fill the vacant positions, notify for new positions so that all academic departments and administrative units become fully functional.

The positions of Heads of institutions, very often, remain vacant in many instances. As per the new governance structure as noted in the NEP, the BoG will be responsible for the appointment of the heads of

institutions and special efforts will be made to ensure that leadership positions are filled in time. Similarly, a merit-based structure of tenure, promotion and salary structure will be strictly implemented.

8.2.7 *Student Support System*

The NEP 2020 lays emphasises on the centrality of learners in the teaching-learning process. It allows a wider freedom of choices in a multi-disciplinary environment and in an outcome-based approach to learning. The need for special focus on the socially and economically disadvantaged groups in terms of enrolment targets, scholarship, mentoring and extending academic support to achieve the expected levels of learning outcomes.

8.2.8 *Financial Plan*

The last important component of IDP is the financial plan of an institution. The reform measures suggested above may involve creating infrastructural facilities, restructuring of study programmes and a multidisciplinary orientation. The academic plan involves the costs of facilitating teaching and research excellence. The need for the recruitment of competent teachers at the institutional level and retaining them also involves costs not only in terms of salary but also in terms of residential, medical, recreational and market facilities. The student support measures include additional costs in terms of fee concessions and scholarships to SEDGs and additional facilities such as banking, transportation, sports, medical, etc.

The most challenging exercise is the resource mobilisation strategies. Institutions funded by the central and state governments will have to prepare a financial plan for adequate budgetary support through grants and loans. It will have to mobilise resources through philanthropy, industry and alumni. It will model its finances through Public Philanthropic Partnership (PPP).

8.2.9 *Process of Implementation, Monitoring and Evaluation*

The IDP must also have an implementation plan indicating the start of activities, person/unit responsible for implementation, monitoring progress and an evaluation at the end of activities. The implementation plan may be presented in the form of a project plan showing the sequencing of steps and the tasks and associated time schedule.

At the overall institution level, the responsibility for monitoring and evaluating the plan could be given to a committee, one of whose important roles is to recommend mid-course corrections, if needed.

CHAPTER

9

Vocationalisation and Skill Development in School and Higher Education

CHAPTER 9

Vocationalisation and Skill Development in School and Higher Education

9.1 Policy Goal

THE NEP 2020 aims to elevate the social status of vocational education by integrating it into the mainstream education. The NEP2020 proposes to expand the accessibility and exposure of vocational education to 50 per cent of the learners of school and higher education by 2025 (NEP 2020, p.44). The policy also envisages integration of vocational education in all institutions throughout school and higher education.

9.2 Current Situation

The globalisation and changing technology have impacted employment and skill requirements in the labour market. The skills required in the labour market have become more complex and demanding. It becomes necessary for the education system to align with the changing skill requirements in the employment market. At the same time, it is a challenging task for the education sector to respond to the changing skill requirements of the economy.

The share of the workforce which received formal vocational training is as low as 2.2 per cent in the age-group of 15-59 and another 8.6 per cent have received vocational training through non-formal channels. The Government of India has initiated several steps to link vocational education and skill development programmes to improve the employability of the youth. Vocational education is introduced as an integral part of general education at the secondary and higher secondary levels. A bachelor's degree in vocational education has been introduced at the higher education level; community colleges have been established and Kaushal Kendras for skill development introduced.

India established a Ministry for Skill Development and Entrepreneurship (MSDE) to provide added focus on enhancing employability of the youth through skill development. The country adopted a National Skills Qualifications Framework (NSQF) in 2013 and it forms the basis for skill development in India. The NSQF is a competency-based quality assurance framework which enables the learner to acquire the certification for competency needed at any level through formal, non-formal or informal modes of training and it recognises prior learning. Since India has one of the highest shares of youth population, the country needs to invest heavily in skill development to take advantage of the demographic dividend. The changing nature of jobs and skill requirements may demand a new set of skills and new modes of skill formation in India. India is economically integrated to the global knowledge economy and the country needs to produce skills to remain competitive.

9.3 Implementation Strategies

To expand and strengthen vocational education as envisaged in NEP 2020, several strategies need to be adopted to achieve the targets. The figure below highlights some of the operational strategies for fulfilling the goals.

Fig. 1: Operational Strategies for Vocationalisation and Skill Development

Detailed interventions required for each strategy is discussed below.

9.3.1 *Mapping the Landscape of Vocational Education*

NEP 2020 aims to integrate vocational education programmes into mainstream education in a phased manner. Beginning with vocational exposure at early ages in middle and secondary schools, quality vocational education will be integrated into higher education. It will ensure that every child learns at least one vocation and is exposed to several more.

This would lead to emphasising the dignity of labour and importance of various vocations involving Indian arts and artisanship.

- By 2025, at least 50 per cent of learners through the school and higher education system will have exposure to vocational education, for which a clear action plan with targets and timelines will be developed. This is in accordance with the Sustainable Development Goal 4.4 and will help to realise the full potential of India's demographic dividend. The number of students in vocational education will be considered while arriving at the GER targets. Vocational education will be integrated into all school and higher education institutions in a phased manner over the next decade.

- Keeping the NEP target of 50 per cent of learners to be exposed to vocational education at school education level (Grades VI-XII) by 2025, two alternative scenarios of enrolment in vocational education by 2025 and 2030 would be built based on enrolment projection at school education at the all-India level by 2030.

Scenario 1: If past trends continue into future up to 2025, what would be the participation level in vocational education at school education level separately for upper primary (Grades VI-VIII), secondary (Grades IX-X) and higher secondary (Grades XI-XII)?

Scenario 2: If NEP 2020 enrolment targets in school are to be achieved by 2025 and 2030 respectively, what would be the required annual average growth of enrolment in vocational education school at school education level separately for upper primary (Grades VI-VIII), secondary (Grades VI-X) and higher secondary (Grades XI-XII)?

Scenario 1: Enrolment Projection in Vocational Education at School Education (Based on Past Trend)

Assumptions, Data and Methodology

- It is assumed that the enrolment in Grades I to XII will grow at the same rate (Exponential Growth Rate) at which it has grown between 2012-13 and 2017-18.
- Based on this growth rate, the grade-wise enrolments have been projected from 2020-21 to 2030-31 separately for upper primary (Grades VI-VIII), secondary (Grades IX-X) and higher secondary (Grades XI-XII). (Refer to Chapter 2 on enrolment projections.)
- By applying the NEP target of 50 per cent of learners to be exposed to vocational education at school education level (Grades VI-XII) by 2025 and 100 per cent by 2030, the enrolment projection or exposure of students to vocational education at school education level have been made.
- It has been assumed that the exposure of students to vocational education in grades VI to XII will gradually increase from 10 per cent in 2021-22 to 50 per cent in 2025-26 and then to 100 per cent by 2030 at average annual growth rate (simple) of 10 per cent.

Based on the above, the Projected Enrolment or Exposure to Vocational Education at School Education Level separately for upper primary (Grades VI-VIII), secondary (Grades IX-X) and higher secondary (Grades XI-XII)) during 2021-22 to 2025-26 to 2030-31 is given in Table 1.

TABLE 1: Projected Enrolment or Exposure to Vocational Education at School Education during 2021-22 to 2025-26 to 2030-31 (Scenario – 1)

Year	Upper Primary (Grades VI-VIII)			Secondary (Grades IX-X)		
	Boys	Girls	Total	Boys	Girls	Total
2021-22	3398869	3170141	6569010	2162901	1990663	4153564
2022-23	6811313	6339612	13150925	4401931	4065518	8467449
2023-24	10237571	9508664	19746235	6719102	6227256	12946358
2024-25	13677884	12677547	26355431	9116472	8478649	17595121
2025-26	17132495	15846514	32979009	11596147	10822544	22418691
2026-27	20601648	19015816	39617464	14160285	13261873	27422158
2027-28	24085591	22185705	46271296	16811090	15799650	32610740
2028-29	27584570	25356434	52941005	19550822	18438976	37989798
2029-30	31098837	28528257	59627095	22381791	21183038	43564829
2030-31	34628644	31701428	66330071	25306362	24035115	49341477

Year	Hr. Secondary (Grades XI-XII)			School Education (Grades VI-XII)		
	Boys	Girls	Total	Boys	Girls	Total
2021-22	1447949	1375461	2823410	7009719	6536265	13545984
2022-23	2981564	2859357	5840921	14194808	13264487	27459295
2023-24	4604839	4458384	9063223	21561512	20194305	41755816
2024-25	6321940	6179623	12501563	29116296	27335819	56452115
2025-26	8137214	8030553	16167767	36865856	34699611	71565467
2026-27	10055193	10019082	20074275	44817127	42296770	87113897
2027-28	12080608	12153564	24234172	52977289	50138918	103116208
2028-29	14218390	14442827	28661217	61353783	58238237	119592020
2029-30	16473684	16896199	33369883	69954313	66607494	136561807
2030-31	18851855	19523533	38375388	78786861	75260076	154046937

Scenario 2: Projection in Vocational Education at School Education Level (To Achieve NEP 2020 Target of 100 per cent GER in School Education by 2030-31)

Assumptions, Data and Methodology

- The grade-wise enrolments have been projected from 2020-21 to 2030-31 separately for upper primary (Grades VI-VIII), secondary (Grades IX-X) and higher secondary (Grades XI-XII) levels to achieve the NEP target of 100 per cent GER in school education level by 2030-31.
- By applying the NEP target of 50 per cent of learners (students) to be exposed to vocational education at school education level (Grades VI-XII) by 2025 and 100 per cent by 2030, the enrolment projection or exposure of students to vocational education at school education level have been made.
- It has been assumed that the exposure of students in grades VI to XII will gradually increase from 10 per cent in 2021-22 to 50 per cent in 2025-26 and then to 100 per cent by 2030 at average annual growth rate (simple) of 10 per cent.

Based on the above, the Projected Enrolment or Exposure to Vocational Education at School Education Level separately for upper primary (Grades VI-VIII), secondary (Grades IX-X) and higher secondary (Grades XI-XII) levels during 2021-22 to 2025-26 to 2030-31 is given in Table 2.

TABLE 2: Projected Enrolment or Exposure to Vocational Education at School Education Level during 2022-23 to 2025-26 (To Achieve the NEP Target of 100 per cent in School Education by 2030-31) (Scenario – 2)

Year	Upper Primary (Grades VI-VIII)			Secondary (Grades IX-X)		
	Boys	Girls	Total	Boys	**Girls**	**Total**
2021-22	3434862	3183738	6618600	2129370	1926753	4056123
2022-23	6901260	6373200	13274461	4316793	3902989	8219781
2023-24	10399412	9568394	19967806	6563455	5929659	12493114
2024-25	13929536	12769328	26698863	8870565	8007735	16878300
2025-26	17491851	15976008	33467860	11239354	10138202	21377555
2026-27	21086580	19188444	40275024	13671073	12322062	25993135
2027-28	24713944	22406642	47120587	16167000	14560336	30727336
2028-29	28374168	25630611	54004779	18728432	16854060	35582493
2029-30	32067476	28860358	60927834	21356692	19204291	40560983
2030-31	35794096	32095891	67889987	24053125	21612101	45665226

Year	Hr. Secondary (Grades XI-XII)			Grades VI-XII		
	Boys	Girls	Total	Boys	Girls	Total
2021-22	1564945	1423521	2988465	7129177	6534012	13663189
2022-23	3285344	2984306	6269650	14503397	13260495	27763892
2023-24	5172780	4692283	9865063	22135647	20190336	42325983
2024-25	7239601	6558016	13797617	30039702	27335079	57374780
2025-26	9498970	8592747	18091718	38230175	34706957	72937132
2026-27	11964917	10808435	22773352	46722570	42318941	89041511
2027-28	14652387	13217800	27870186	55533331	50184777	105718109
2028-29	17577302	15834365	33411667	64679902	58319037	122998939
2029-30	20756620	18672511	39429131	74180788	66737161	140917949
2030-31	24208396	21747522	45955918	84055618	75455514	159511131

If NEP 2020 target of 100 per cent GER in School Education by 2030-31 is achieved, the projected enrolment or exposure to vocational education at upper primary education level (Grades VI-VIII) will increase from 6.6 million in 2021-22 to 33.5 million in 2025-26 and further increase to 67.9 million in 2030-31 at a simple annual growth rate of 10 per cent. Similarly, the projected enrolment or exposure to vocational education at secondary education level (Grades IX-X) will increase from 4.1 million in 2021-22 to 21.4 million in 2025-26 and further increase to 45.7 million in 2030-31 at a simple annual growth rate of 10 per cent while the projected enrolment or exposure to vocational education at higher secondary education level (Grades XI-XII) will increase from 3 million in 2021-22 to 18.1 million in 2025-26 and further increase to 46 million in 2030-31 at a simple annual growth rate of 10 per cent. On the whole, the projected enrolment or exposure to vocational education at school education level (Grades VI-XII) will be 13.7 million in 2021-22 to 72.9 million in 2025-26 and it will further increase to 159.5 million in 2030-31 at a simple average annual growth rate of 10 per cent.

9.3.2 *Enrolment in or Exposure to Vocational Education at Higher Education Level*

Based on the trends in transitions rates from school education to higher education and to achieve the NEP target of 50 per cent GER in higher education by 2035 and 50 per cent learners to be exposed to vocational education at higher education level by 2025 and 100 per cent by 2035, two alternate scenarios of expansion in vocational education at higher education level have been developed.

Scenario 1: If past trends in enrolment continue into future, what would be the enrolment in vocational education at higher education level?

Scenario 2: If NEP 2020 enrolment targets of 50 per cent GER in higher education are to be achieved by 2035, what would be the required annual average growth of enrolment in vocational education at higher education level?

Scenario 1: Enrolment Projection in Vocational Education at Higher Education Level (Based on Past Trends in Transition Rate)

Assumptions, Data and Methodology

- It is assumed that enrolment in higher education will grow at the same rate (Exponential Growth Rate) at which it has grown between 2012-13 and 2017-18.
- Based on this growth rate, enrolment at higher education have been projected from 2020-21 to 2037-38. Based on the past trend, 50 per cent GER will be achieved in 2037-38 For details see Chapter 2 on enrolment projections.
- By applying the NEP target of 50 per cent of learners to be exposed to vocational education at higher education level by 2025-26 and 100 per cent by 2037-38, the enrolment projection or exposure of students to vocational education at higher education level have been made.
- It has been assumed that the exposure of students to vocational education at higher education will be provided by gradually increasing enrolment in B Voc and D Voc courses as well as by offering elective subjects/courses in all disciplines/programmes at undergraduate and PG level.
- The enrolment in vocational education at higher education level BVoc courses will increase from 1 per cent in 2018-19 to 50 per cent in 2025-26 (10 per cent in BVoc courses and 40 per cent in elective subjects) and to 65 per cent by 2030-31 (15 per cent in BVoc courses and 50 per cent in elective subjects) and to 80 per cent by 2035-36 (20 per cent in BVoc courses and 60 per cent in elective subjects) and finally to 100 per cent in 2036-37 (25 per cent in BVoc courses and 75 per cent in elective subjects)

TABLE 3: Projected Enrolment in Vocational Education at Higher Education Level during 2021-22 to 2037-38

Year	Enrolment in Hr. Education			Enrolment in B.Voc and DVoc Courses			No. of Students to be exposed to Voc Education		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
2018-19	19209888	18189500	37399388	22081	20861	42942	NIL	NIL	NIL
2019-20	19571002	18955120	38526122	NA	NA	NA	NIL	NIL	NIL
2020-21	19938905	19752965	39691870	NA	NA	NA	NIL	NIL	NIL
2021-22	20313724	20584393	40898117	2031372	2058439	4089812	8125490	8233757	16359247
2022-23	20695589	21450817	42146405	2069559	2145082	4214641	8278235	8580327	16858562
2023-24	21084632	22353709	43438341	2108463	2235371	4343834	8433853	8941484	17375336
2024-25	21480988	23294606	44775594	2148099	2329461	4477559	8592395	9317842	17910238
2025-26	21884796	24275106	46159901	2188480	2427511	4615990	8753918	9710042	18463961
2026-27	22296194	25296876	47593070	3344429	3794531	7138961	11148097	12648438	23796535
2027-28	22715326	26361654	49076980	3407299	3954248	7361547	11357663	13180827	24538490
2028-29	23142337	27471250	50613587	3471351	4120688	7592038	11571168	13735625	25306794
2029-30	23577375	28627551	52204926	3536606	4294133	7830739	11788687	14313775	26102463
2030-31	24020591	29832521	53853112	3603089	4474878	8077967	12010295	14916261	26926556
2031-32	24472139	31088211	55560349	4894428	6217642	11112070	14683283	18652927	33336210
2032-33	24932175	32396754	57328928	4986435	6479351	11465786	14959305	19438052	34397357
2033-34	25400859	33760375	59161234	5080172	6752075	11832247	15240515	20256225	35496740
2034-35	25878353	35181393	61059746	5175671	7036279	12211949	15527012	21108836	36635848
2035-36	26364824	36662223	63027047	5272965	7332445	12605409	15818894	21997334	37816228
2036-37	26860439	38205383	65065823	6715110	9551346	16266456	20145329	28654038	48799367
2037-38	27365372	39813497	67178869	6841343	9953374	16794717	20524029	29860123	50384152

Based on the above, the Projected Enrolment or Exposure to Vocational Education at Higher Education Level (separately for BVoc Courses and Elective subjects) during 2021-22 to 2025-26 to 2037-38 is given in Table 3.

As we may see in Table 3, the projected enrolment or exposure to vocational education at higher education level will increase from around 42,000 in 2018-19 to 23.1 million in 2021-22 (4.6 million in vocational courses and 18.5 million in elective subjects) and further to 67.2 million in 2037-38 (16.8 million in vocational courses and 50.4 million in elective subjects).

Scenario 2: Enrolment Projection in Vocational Education at School Education Level

(To Achieve NEP 2020 Target of 50 per cent GER in Higher Education by 2035-36)

Assumptions, Data and Methodology

- The enrolment in higher education has been projected from 2020-21 to 2035-3, based on the NEP target of 50 per cent GER in higher education by 2035. (Refer to Enrolment Projection in Chapter 2.) By applying the NEP target of 50 per cent of learners to be exposed to vocational education at higher education level by 2025-26 and 100 per cent by 2035-36, the enrolment projection or exposure of students to vocational education at higher education level have been made.
- It has been assumed that the exposure of students to vocational education at higher education will be provided by gradually increasing enrolment in BVoc and DVoc courses as well as by offering elective subjects/courses in all disciplines/programmes at undergraduate and PG level.
- The enrolment in vocational education at higher education level BVoc and DVoc courses will increase from 1 per cent in 2018-19 to 50 per cent in 2025-26 (10 per cent in BVoc courses and 40 per cent in elective subjects) and to 65 per cent by 2030-31 (15 per cent in BVoc courses and 50 per cent in elective subjects) and to 80 per cent by 2035-36 (20 per cent in BVoc courses and 60 per cent in elective subjects) and finally to 100 per cent in 2036-37 (25 per cent in BVoc courses and 75 per cent in elective subjects).

Based on the above, the Projected Enrolment or Exposure to Vocational Education at higher education level (separately for BVoc Courses and Elective subjects) during 2021-22 to 2025-26 to 2035-36 is given in Table 4.

As given in Table 4, the projected enrolment or exposure to vocational education at higher education level will increase from around 43000 in 2018-19 to 20.8 million in 2021-22 (4.2 million in vocational courses and 16.6 million in elective subjects) and further to 68.5 million in 2035-36 (17.1 million in vocational courses and 51.4 million in elective subjects).

TABLE 4: Projected Enrolment in Vocational Education at Higher Education Level during 2022-23 to 2035-36

Year	Enrolment in Hr. Education			Enrolment in BVoc and DVoc Courses			No. of Students to be exposed to Voc Education		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
2018-19	19209888	18189500	37399388	22081	20861	42942	Nil	Nil	Nil
2019-20	19935720	18821000	38756719	Nil	Nil	Nil	Nil	Nil	Nil
2020-21	20688976	19474424	40163400	Nil	Nil	Nil	Nil	Nil	Nil
2021-22	21470694	20150534	41621228	2147069	2015053	4162123	8588278	8060213	16648491
2022-23	22281949	20850116	43132065	2228195	2085012	4313206	8912779	8340047	17252826
2023-24	23123856	21573987	44697843	2312386	2157399	4469784	9249542	8629595	17879137
2024-25	23997574	22322989	46320563	2399757	2232299	4632056	9599030	8929196	18528225
2025-26	24904305	23097995	48002299	2490430	2309799	4800230	9961722	9239198	19200920
2026-27	25845296	23899907	49745202	3876794	3584986	7461780	12922648	11949953	24872601
2027-28	26821841	24729659	51551501	4023276	3709449	7732725	13410921	12364830	25775750
2028-29	27835285	25588219	53423504	4175293	3838233	8013526	13917642	12794110	26711752
2029-30	28887021	26476587	55363608	4333053	3971488	8304541	14443510	13238293	27681804
2030-31	29978496	27395796	57374292	4496774	4109369	8606144	14989248	13697898	28687146
2031-32	31111211	28346919	59458130	6222242	5669384	11891626	18666727	17008151	35674878
2032-33	32286726	29331062	61617788	6457345	5866212	12323558	19372036	17598637	36970673
2033-34	33506656	30349373	63856029	6701331	6069875	12771206	20103994	18209624	38313617
2034-35	34772681	31403037	66175718	8693170	7850759	16543929	26079511	23552278	49631788
2035-36	36086541	32493282	68579823	9021635	8123320	17144956	27064906	24369961	51434867

TABLE 5: Summary of Enrolment Projection or Exposure to Vocational Education at School and Higher Education Level during 2021-22 to 2035-36

(Alternative Scenarios of Expansion of Vocational Education)

Educational Level	Alternative Scenario	Assumptions	Enrolment Target in Vocational Education (in Million)	Total Enrolment Target (in Million)
School Education (Grades VI-XII)	Scenario 1	Based on Past Trend in Enrolment Growth	**By 2025-26** = 71.6m (50 per cent of the total enrol. in grade VI-XII) **By 2030-31** = 154 m (100 per cent of the total enrol. in grade VI-XII)	**By 2025-26** = 143.2m **By 2030-31** = 154 m
	Scenario 2	To Achieve NEP 2020 Target of 100 per cent GER in School Education by 2030-31	**By 2025-26** = 72.9 m **By 2030-31** = 159.5 m	**By 2025-26** = 145.8 m **By 2030-31** = 159.5 m
Higher Education	Scenario 1	Based on Past Trend in Enrolment Growth	**By 2025-26** B Voc & D Voc Courses = 4.6 m Elective Subjects = 18.5 m **By 2037-38** B Voc & D Voc Courses = 16.8 m Elective Subjects = 50.4 m	**By 2025-26** = 46.2 m **By 2037-38** = 67.2 m
	Scenario 2	To Achieve NEP Target of 50 per cent GER in Higher Education by 2035-36	**By 2025-26** B Voc & D Voc Courses = 4.8 m Elective Subjects = 19.2 m **By 2035-36** B Voc & D Voc Courses = 17.2 m Elective Subjects = 51.4 m	**By 2025-26** Exposure to VE = 48.0 m **By 2035-36** Exposure to VE = 68.6 m

9.3.3 *Skill Mapping to Identify Skills to be Emphasised in Different Regions/Localities*

To fulfil the above-mentioned strategy, the following points could be considered:

- The National Committee on Integration of Vocational Education (NCIVE) could oversee the skill gap analysis.
- Vocational Education courses should be offered and chosen on the basis of skills gap analysis and mapping of local opportunities.
- In rural areas there are various agricultural skills that have to be developed but the spatial context would need specific skills based on the region.
- The demand and supply for VE needs to be mapped with reference to the context that may be based on the indicators like industry, region, gender, etc. for making constant changes on the ground.
- The higher education institutions may engage in identifying skill gaps in their local surroundings and the skill gap analysis done by NSDC should be shared regularly with these institutions, which would help them in making rational choice for offering vocational courses enhancing the employment prospects in the region.

9.3.4 *The Skills to be Aligned with National Skill Qualification Framework (NSQF)*

- In order to mainstream skills, Government of India launched an integrated qualification framework — National Skills Qualification Framework (NSQF), with varying proportion of vocational skill hours to academic sessions and lab hours allowing horizontal and vertical mobility. NSQF organises qualifications according to a series of levels of knowledge, skills and aptitude. These levels are defined in terms of learning outcomes which a learner must possess regardless of whether they were acquired through formal, non-formal or informal learning.
- As envisaged by the National Education Policy2020, the NSQF will be detailed further for each discipline and profession. It will also be associated to credit-based framework and facilitate mobility across general and vocational education.
- National Higher Education Qualification Framework will be congruent to NSQF, and the National Occupational Standards-Qualification Packs need to be aligned with NSQF.
- For seamless vertical and horizontal mobility of students and vocationally trained persons, nationally and internationally, the National Standards will be aligned to the International Standard Classification of Occupations (ISCO).

9.3.5 *Integrating Vocational Education with General Stream*

Integrating vocational education with general education is the most promising way to provide for holistic development of the students, equipping them with knowledge, skills and competencies which would prepare them for life and for work. This integration will also help to elevate the social status of vocational education and remove the stigma attached to it by instilling the feeling of respect and dignity of labour. To operationalise integration of vocational education at school and higher education, following strategies may be adopted:

- To operationalise the integration process, it is imperative to have coordination between MOE and MSDE at the Central level, and the State Skill Development Missions and the State Education Departments at the State level.
- In order to prepare themselves for imparting vocational education in meaningful way, the schools, colleges and universities need to collaborate with industry in their vicinity.
- Apprenticeship models need to be developed by the educational institutes in collaboration with industry.
- Educational institutions should own the responsibility of imparting the theoretical aspect of the vocational subject. With regard to the practical orientation of the subject, the institutions should identify and collaborate with industries in their vicinity for internship/apprenticeship programmes to expose the students to the work environment and get the experience of hands-on practice.
- Keeping in view the policy proposal that all children be exposed to vocational education from grade VI to XII at school education, general orientation to vocational education need to be given to students of grade VI to VIII and vocational subjects should be made compulsory and not an elective or additional subject in grades IX to X. At higher secondary level (XI-XII), in addition to the separate stream of vocational education, vocational subjects may be introduced with other disciplines also in general stream.
- At higher education, to increase the exposure to vocational education in addition to the B.Voc. Courses, elective subjects/courses in all disciplines/programmes should be offered at undergraduate and post-graduate level, and short-term certificate courses may be introduced.
- The sanction of vocational courses should be done keeping in mind the geographies of the institutions and with proper assessment of the infrastructure and other facilities to run the courses.
- Guidance and Counselling Service needs to be institutionalised. For this it will be mandatory to appoint a professionally trained Counsellor in every educational institution. It will assist the student in knowing better about self and the world of work. It would enable a student in making realistic choices of courses and vocational field align to her/his aptitudes, interests and personality traits. The Career Guidance and Counselling need to be carefully planned at each stage of education keeping in mind the psychological profile of the child in the respective stage of education.
- At higher education, bridge courses of varying duration need to be developed, depending on the pre-requirements of the course a student intends to move to horizontally. Students may identify the bridge courses they need to take admission to different courses/programmes.
- Credit based system should be introduced which will facilitate smooth mobility of students between courses and programmes.
- Educational organisations at the national and state level (PSSCIVE, SCERTs) need to be strengthened with resources to develop NSQF aligned curriculum and the text books for vocational subjects in consultation with industry experts/sector skills council.
- The concept of "Mentor Institutes" (Nodal Institutes) may be followed while permitting new courses in college level institutions venturing into vocational education. These mentor institutions will be supported with additional funding for mentoring other institutes by way of training teachers, support in building industry connect, support in curriculum development and student internships. This will help

institutions to form regional clusters of vocational institutions coordinated by the Mentor Institute and thereby all institutions will be benefitted out of resource sharing.

- An online platform can be created for sharing good practices with reference to learning assessment and creating job opportunities for the learners.
- Preference may be given to the Socially and Economically Disadvantaged Groups (SEDGs) by providing special facilities for higher education through appropriate reservation for admission, scholarships, provision of hostel facilities etc.
- To monitor the integration process at the State level, State Education Commissions need to be established. At the Centre, the National Committee for Integration of Vocational Education (NCIVE) can monitor the integration efforts.

9.3.6 *Capacity Development Programmes for Teachers*

- To operationalise any education and training programme, human resource is imperative. With the expansion and integration of vocational education in school and higher education, the requirement of vocational teachers/trainers and assessors will increase. Moreover, for vocational education programme, it is very difficult to get teachers with industry experience. Teaching in skill courses requires a different pedagogical approach and training. Hence, the teacher qualifications and recruitment processes need to be streamlined.
- State governments need to make an attempt to improve the status of these teachers. The service conditions, salary and other benefits should be at par with the teachers in the general stream. This will help in drawing the best talents to this programme. The teacher career progression may be uniform across all states with respect to recruitment, tenure, professional development, salary, promotions, and other recognitions. Promotions and salary increments should not be based on the length of tenure or seniority, but on the basis of appraisal.
- The teacher preparation needs to synchronise with the requirement as well as provisioning of the facilities. It needs to be planned according to the number of streams offered, on the basis of the needs-assessment and the geographies of both school and higher education. It would also require creation of linkages with the different providers from the community and industry.
- Provisions for pre-service and induction training for teachers recruited to teach the courses in vocational programme is lacking and should be considered on priority while implementing the NEP proposal. Organisations at the national, state and district level such as the NITTTs, PSSCIVE, SCERTs and DIETs could be entrusted with the responsibility of teacher training and their continuous upgradation through collaboration with industry and training providers.
- Teacher training may involve local eminent persons or experts as 'master instructors' in various subjects, such as 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 vocations through theoretical and practical knowledge.
- Currently, assessment of the students undergoing the vocational education courses is done by Sector Skills Council which requires huge funds and sometimes it is not timely done. In order to cut down costs, the teachers need to be equipped and trained to do the assessment also besides teaching, which will ensure timely and economical assessment of the students.

9.3.7 *Developing a Framework for Recognition of Prior Learning (RPL)*

In India, the picture of formal skill training among the people is very dismal when compared to other countries due to various reasons. As a consequence, most of the skill acquisition takes place through informal and non-formal channels. Giving recognition to such prior learning by training and certification will certainly give a boost to career progression and mobility of the individuals.

RPL Framework Developed by MSDE

Recognition of Prior Learning (RPL) was first launched as a component under Pradhan Mantri Kaushal Vikas Yojana (PMKVY) 2015-16, as a pilot programme. PMKVY is implemented by National Skills Development Corporation (NSDC) under the guidance of the Ministry of Skill Development and Entrepreneurship (MSDE). It was again re-launched under PMKVY 2016-20 and the target under PMKVY 2016-20 was to conduct RPL certification for 40 lakh people in the workforce. Currently, RPL is being implemented in PMKVY 2016-20 in project mode, with the following type of projects allowed in the PMKVY 2016-20 guidelines:

- RPL Camps (TYPE-1) — RPL in a location (i.e. an Industrial/Traditional Cluster) where workers from a sector are available in large numbers, e.g. Automotive Cluster of Mumbai-Pune; 4000 drivers certified through a RPL camp in Himachal Pradesh.
- Employer's Premises (TYPE-2) — RPL on-site at an employer's premise, i.e. workshop, factory, store or outlet etc.
- RPL Centres (TYPE-3) — RPL at designated centres for geographically scattered workers who need to be mobilised.

All RPL candidates undergo the 5-step RPL process for recognition: a) Mobilisation b) Counselling and Pre-Screening c) Orientation d) Final Assessment e) Certification and Payout.

RPL Framework Developed by NIOS

National Institute of Open Schooling (NIOS) developed an RPL framework of outcomes-based qualifications against which prior learning can be mapped. This aims at producing a form of recognition that can be interpreted by training providers and employers, as well as the learners themselves. The applicant seeking RPL will contact the Mentor and the Assessor accredited by the NIOS for guidance on how to go about to obtain recognition for prior learning. The various steps involved in implementation of RPL include: Application, Pre-assessment, Screening of application, Portfolio workshop, Assessment, Evaluation and moderation, Feedback and Post-assessment support.

Operational Strategies for RPL are as below.

- Identification of agencies at the state level which could be entrusted with the responsibility to assess the prior learning skill levels is the need of the hour.
- India has a large informal economy that consists of a huge proportion of the population which has acquired the skills through informal mode and requires certification. To mobilise and address the needs of the vast size of this target group, it would be better if more agencies could be involved in recognition and assessment of skills.

- RPL certification needs to carry some credibility and market value to be accepted readily by the employers. It should also lead to increased wages/incomes which will attract people to register for this programme.
- To augment the labour market opportunities of the informally skilled population, the agencies responsible for RPL while assessing, should also identify skill gaps and accordingly provide short-term skill training before certification.
- More awareness campaigns need to be conducted to generate awareness and the need of RPL among the potential candidates.
- It is very important to focus on the disadvantaged sections while implementing RPL. Thus, identifying and mobilising candidates from the disadvantaged sections would be of enormous value for economic and social mobility of such groups.

CHAPTER

10

Reforming Structures of Governance in the Federal Framework of Education

CHAPTER 10

Reforming Structures of Governance in the Federal Framework of Education

Background

REFORMING the system of governance of education is one of the important transformative agendas of the National Education Policy 2020. The policy envisions reforms in governance as a requisite for achieving the targets and goals of education in coming years. The governance reforms agenda consists of a number of proposals for structuring and restructuring of governance at all the levels. These permeate both the school and higher education. The proposed reforms may have important implications and challenges at least on two counts. First, in addressing issues related to diversity, disparities and unequal capacity of states to deal with them. Second, effecting these changes in the context of the federal framework of governance of education. The past experience shows that some of the bills relating to reform or change in the governance of higher education could not be passed as these had serious federal implications. The initiatives are opposed at times by the states on the grounds of infringement on the powers of the states. The attempt is to map out the issues in the federal framework of educational governance and propose operationalisation strategies pertaining to policy proposals on school education and higher education.

Part 1: School Education

10.1 Policy Goal

The NEP 2020 makes a number of proposals for reforming the governance of school education Four of the major proposals for governance reforms include: a) demarcation of role and responsibilities between the department of school education and directorates of school education; b) setting up of State School Standards Authority; c) reforming Board of Assessments/ State School Examination Boards tuned with the proposal of transforming the assessment and examination system; and d) creation of School Complexes/Clusters for efficient resource sharing and effective governance of schools. Whereas the first three relate to reform at the state level, the fourth reform refers to governance below the block level educational administration.

Though all these proposed reforms are interconnected, it is specifically important to demarcate the role and responsibilities between the department of school education and directorates of school education, on the one hand, and a re-alignment of role and responsibilities of district (DEOs) and sub-district administration (BEOs) in the changing framework of governance, on the other. The idea of school complex was recommended in the earlier policy. However, the idea could not take off in true spirit in the actual functioning. The NEP 2020 recommends the creation of school complexes with more clarity and empowered structures of decentralised educational governance at local level. A write-up on operationalisation of the proposed School Complexes has been provided separately.

10.2 Implementation Strategies

10.2.1 *Demarcation of Role and Responsibilities between the Department of School Education and Directorates of School Education*

The policy proposes clear demarcation of responsibilities between the department of school education and directorates of school education. In case of administration of schools in Indian states, such demarcation has hitherto been subdued. The department of school education is supposed to perform the steering function and the directorates of school education, and associated structures and sub-structure are needed to perform the executing/rowing functions. But considerable overlap in the functioning of various structures not only creates confusion but may also cause delay in decision making at the appropriate level of administration besides causing a conflict of interests. Therefore, it is necessary to restrict the functions and responsibilities of the department of school education to its steering functions of policy formulation and regulation. The department of school education may be entrusted with the responsibity of preparing the draft policy relating to different aspects of education. It may also prepare the draft of legislative acts for enactment in the state as well as subordinate legislations such as Rules, Regulations, Orders, and Notifications, etc., in accordance with the relevant Acts. It should be kept away from the functions of provisioning service delivery, compliance, adjudication and assessment functions as well.

It is equally important to demarcate the roles and responsibilities of different Directorates functioning under the department of school education on the basis of their functions. The proposed structure of School Standards Authority, as envisaged in the policy, is to be entrusted with the responsibly of maintaining minimum standards of quality in schools as per the indicated parameters. It will also discharge the responsibility of adjudication in case of grievances in terms of regulation. The Directorates of School Education may be entrusted with the exclusive functions of delivery and compliance. It will be the responsibility of the directorate to ensure that the educational delivery is as per the provision and rules and it is reaching to the schools and students on time. The compliance function will include inspection whether the schools are functioning as per the stipulated norms and expectation.

The whole set of officers including the DEOs and BEOs will perform this function under the guidance and control of the Directorate. The Principal Secretary or Secretary of School Education should be entrusted with the responsibility of provision and operation, compliance or assessment and quality monitoring of schools directly. The policy has proposed that these structures be functionally autonomous. It does not indicate any hierarchical control system as per the organisational principles and structure. But all these structures must have a proper control system for ensuring checks and balances as an important point of administrative intervention strategy. Therefore, all the structures need to be put under the overall control of the department of school education for the purpose of monitoring.

The implementation of the policy neccessitates an assessment of administrative structure required at the state level, taking into account various dimensions such as the size of the state, number of schools, number of teachers, number of educational districts, population size of school going children and the diversity of population. The information and data relating to the structure and functions of educational administration in various states and union territories of India under the Third All India Survey of Educational Administration, one of the important and exclusive initiatives of NIEPA as a signature project, indicates a wide range of variations across the states in terms of structures of administration as well as number of directorates with differentiated functional responsibilities. The structures of administration and number of directorates are not essentially based on rationally defined criteria, keeping in view the efficiency, effectiveness and economies of scale in administration.

Similarly, the entire school education in all the states is not under the department of school education. The schools in tribal areas are under the Tribal Welfare Department with its own administrative structure and a different set of officers. There is hardly any interface and coordination between the two departments in dealing with school education. There is thus the need to bring together these two departments for effective resource sharing and governance in the light of the policy proposals of NEP 2020. Specification of core responsibilities in respect of each of the structures is much needed. This exercise can help in suggesting a better mechanism of administrative structure and as well as well-defined responsibilities at the state level.

Though the NEP 2020 pays attention to the need of separation of powers between the Department and Directorate, it does not make any specific reference to the number of structures to be in place at the state level. Obviously, it has been left to the states to align their structures with the policy recommendations of reform in governance structure. In this regard, it would not be out of place to point out that attention needs to be paid to the academic support institutions such as the SCERTs, DIETs, BITEs, BRCs, CRCs, etc. In NEP 2020 a pivotal role and functions are expected to be performed by these institutions. However, the empirical insights relating to their status, role and functioning says a different story. Most of these institutions across the states are facing a variety of challenges in terms of faculty and resources. As part of the strategy of implementation, this needs to be addressed. Unless these institutions are strengthened and empowered in every sense of the term, they may not be in a position to discharge their responsibilities effectively. Similarly, SIEMAT could be an important state level institution to materialise some of the proposed reforms in school governance as these can provide training to the Heads of School Complexes, School Complex Management Committees as well as district and block level education officers. SIEMAT can promote synergy between the field level education officers and state level officers through its interventions in terms of training and capacity building.

NIEPA can play an important role in implementation of state specific training programmes for orienting the education officers in a variety of educational planning and management activities as well as plan programmes, for the benefit of the Heads of School Complexes through online mode. While transacting the programmes, the research inputs and field experiences of the NIEPA professionals will be shared in order to develop activities in the schools through innovative approaches. Some successful stories of the innovations in the management of school complexes in various states can be shared in order to ignite the minds of the school heads to innovate something new for the development of the schools. School heads may also be encouraged to share their innovations which they will be undertaking in the future once the school complexes are implemented in the states.

10.2.2 *Realignment of Role and Responsibilities of District (DEOs) and Sub-District Administration (BEOs) in the Changing Framework of Governance of Schools*

The creation of School Complexes as semi-autonomous structures of school administration and governance as well as other proposed new structures of administration in regard to school education will require revisiting the roles and responsibilities of DEOs and BEOs. The policy makes a reference not only to the need of realignment of administrative structures at the district and sub-district levels but also to the role of DEOs and BEOs in administration of school education. The DEOs and BEOs are variously designated in different states but for the purpose of this write-up the district and block level education officers have been covered under a generic category of this set of officers, as DEOs and BEOs respectively.

District and sub-district education officers can be a key actor and agent of transformation of the scenario in the governance of school education at the field level, if their role and responsibilities are spelt out clearly in order to ensure an outcome-based approach in education governance. Besides the direct reference to

the role of DEOs and BEOs, the proposed reforms also have a number of implications. An apparent shift in the expected role of the DEOs and BEOs is of having an added emphasis on quality on the one hand and transparent governance with the use of ICT on the other.

The proposed creation of school complex and anew state level structure of State School Standards Authority, besides many other policy proposals relating to governance of school education, will have direct implications for the DEOs and BEOs in terms of their responsibilities. They will be expected to discharge the responsibility of delivery and compliance — the function of educational administration at their levels. The policy proposes demarcation of functional responsibilities among the structures of administration and governance at the state level but does not specifically mention the role of the DEOs and BEOs except for realignment. In the given scenario, the DEOs and BEOs would be expected to perform both academic and administrative functions mediated through the school complexes.

The officers at the district and block levels remain the key functionaries in maintaining and improving the overall quality of education. However, there are a number of issues at the field level, and they deserve attention here. The data gathered through the Third All India Survey of Educational Administration in NIEPA, the ongoing research study on the role and responsibilities of DEOs and BEOs, and the information and insights gathered through various programmes organised for the DEOs and BEOs in NIEPA about educational administration at the district and block levels indicate two important points, among many. The first is inadequate academic supervision and monitoring of schools by the DEOs and BEOs and the second is performance of too many non-academic and non-educational responsibilities by these officers.

It is often noted that DEOs and BEOs are loaded with administrative tasks and, as a consequence, they are unable to devote much time to the academic aspects. Due to their engagement in non-academic tasks, academic supervision is severely impacted. Quite often, the norms for supervision remain unfulfilled for several reasons. Given the current roles of and challenges faced by DEOs/BEOs, it is very crucial to address the existing challenges as well as realign their roles and responsibilities in the light of the new structures proposed in NEP 2020.

10.2.3 *Realigning the Roles in the Light of the NEP 2020*

- It is expected that the school complex as a semi- autonomous body will have two inseparable and interlinked aspects: a) academic and b) governance and leadership. For improving the academic aspects, strengthening and capacity building of the BRCs and CRCs is very crucial. On the other hand, the DEOs and BEOs need to take care of the governance and leadership aspects.
- Rationalisation of schools would be an obvious consequence of the establishment of school complexes. This will not only have implications on the human, physical and financial resources, but on the roles of DEOs and BEOs as well. The current job chart of these officers would require major modifications in tune with the school complexes.
- Since the approach to education has seen a gradual shift to a rights-based approach with RTE 2010, a new structure of accountability is needed wherein the role of DEOs/BEOs is not only to ensure the fulfilment of RTE norms but also to provide an enabling environment within schools/school complexes.
- Furthermore, establishment of school complex would require a revisit of the existing norms of supervision. Instead of number of schools, number of school complexes for inspection might prove to be effective.

- The School Complex Management Committee (SCMC) is a very important administrative structure and might serve as the key unit for efficiency of the school complexes. In the composition of SCMC, the DEO/BEO as a member should be included so that the officer is familiar with the School Complex and can ensure better transparency and accountability.
- A clear demarcation of administrative and academic responsibilities will ensure better performance of DEOs and BEOs. For instance, in the state of Himachal Pradesh, a separate cadre for inspection has been established so that officers can pay undivided attention to the academic aspects of education. Such practices can be replicated elsewhere.
- The NEP document lays enormous emphasis on technology to bring transparency and efficiency in the system. Quite often it is found that the DEOs and BEOs lack the required ICT skills. Capacity building of the officers to attain and upgrade such skills remains very crucial in realising the vision of NEP 2020.
- In the Operationalisation of the State School Standard Authority (SSSA), the role of DEO/BEO should not be seen merely as a mediator between the state and the schools. Rather, they need to be viewed as leaders who can greatly influence the realisation of the desired change within the schools. The officers need to be given the authority and decision-making power to act on matters which would bring quality improvement in schools.
- As the administrative setup differs from state to state, so are the roles of DEOs and BEOs. Since the proposed interventions/structures in NEP 2020 will have a direct bearing on the roles and responsibilities of DEOs/BEOs, it might be practical to implement the structures in a few districts of a state initially. These can be later replicated throughout the state after gaining insights on the strengths and challenges of implementing the policy proposals.

In view of the above, a reassessment/realignment of the roles and responsibilities of these officers is required to be done. It may necessitate recasting the roles and responsibilities of the DEOs and BEOs in the light of the proposed reforms in the governance of school education in the state specific situation. The data gathered through the Third All India Survey of Educational Administration in NIEPA as well as ongoing research study on roles and responsibilities of DEOs and BEOs can provide a basis for making informed suggestions in this regard which could form the component of implementation strategy.

Part II: Higher Education

10.3 Policy Goal

The proposals for reforming the governance of higher education relate to three levels,viz. the Union, State and Institutional levels. The policy proposes the creation of many new structures of governance. There is an urgent need for harmonising the institutional level structures and processes with the state level structures and processes of governance and the national level context of policy proposal.

10.4 Implementation Strategies

10.4.1 *Transforming the Regulatory System of Higher Education at the State Level*

The policy proposes a transformation of the regulatory system by setting up a single regulator as Higher Education Commission of India (HECI) with four verticals for regulation (NHERC), accreditation (NAC),

funding (HEGC) and academic standard setting (GEC). While the idea of a single regulator facilitating 'light but tight' regulation is laudable, more concrete proposals on the composition of the umbrella HECI and its four verticals, and the relationships between them, are needed. Unless the mandate, role and composition of each of the verticals are clearly spelt out, it may create problems of overlapping functions (NEP 2020, pp.46-48).

The basic idea behind creating a single regulator is to mitigate the problems of over-regulation in higher and professional education. All the professional bodies, except the medical and law streams of education, will be part of the General Education Council under HECI. These are proposed to be the professional standard setting bodies for different streams of professional education. Details of the new proposed regulation system need to be worked out. The composition of these bodies and their linkages with state higher education authorities needs to be articulated (NEP 2020).

Though the policy is less elaborate on the changes in the structure of regulation at the state level structures, it is necessary to provide further details about the role of the four verticals of HECI and state universities and other institutions under the state control.

Further, there exist State Higher Education Councils (SHECs) in many states. The State Higher Education Councils were created as per the recommendation of the NPE1986 to coordinate higher education at the state level. However, the idea of an empowered and functional state level body in the form of the SHECs could not take off for various reasons, including some legal and constitutional issues. The launch of RUSA has provided an impetus to this structure. The SHECs have become functional in many states. As a way of operationalisation strategy, the state level institutional structure of SHEC could be resourced. Therefore, the existing SHECs need to be aligned with the HECI and its verticals (NEP 2020).

10.4.2 *Effective Governance and Leadership in Higher Education Institutions (NEP 2020, pp.49-50)*

10.4.2.1 Institutional Governance in Higher Education in the Framework of Autonomy and Accountability:

NEP proposes to have only three types of institutions within the framework of the university system: research-intensive universities, teaching-intensive universities and autonomous degree-granting colleges. A separate write-up on the policy proposal of institutional/university restructuring has been prepared. The ensuing sections of the present write-up, therefore, focus more on the institutional context of proposed policy reforms in governance of higher education.

NEP 2020 envisions university as an autonomous structure with an empowered structure of governance at the institutional level. The idea of autonomy within the framework of graded autonomy is one of the most important points of reference for reforming higher education. For realising the idea of providing maximum autonomy to the institutions, the policy proposes an empowered structure of Board of Governors. In a sense, the idea of autonomy is intertwined with the goal of empowered structure of governance for ensuring quality and excellence in the institution.

However, for operationalising the idea of an autonomous structure of university governance in the form of a Board of Governors in the institutions, it is important to understand the types of institutions prevailing in India. In India, there is a variety of higher education institutions.

There are multi-faculty universities established by the central and state governments; some of these are unitary while others are affiliating universities. There are also open universities established by the central and state governments, professional and technical institutions, deemed universities (which are not established by central or state acts but charted by the UGC), private universities, institutions of national importance established by the Acts of Parliament such as the Indian Institutes of Technology (IITs), National Institutes of Technology (NITs), Indian Institutes of Management (IIMs), and Indian Institutes of Science, Education and Research (IISERs) etc., offering professional undergraduate, postgraduate and research programmes. Each of the institutions has to follow a framework of governance derived from the context of their establishment.

If we take up the case of university system, public universities in India are established by an Act of the Parliament or state legislatures. These Acts provide the framework for the functioning of the higher education institutions. The concern of autonomy needs to be addressed in the context of the agreed roles of the government and the institution as defined by the Act. Autonomy does not mean absence of regulations. The state needs to provide a framework for operation of universities so that the institutions of higher education can contribute to national development. Autonomy is the capacity of institutions to work within this framework and reduce the reliance on government and its interference from domains which are legitimately belonging to the authority of institutional decision making.

The policy proposal envisioned in the NEP 2020 for reinforcing the idea of autonomy and graded autonomy in case of the university system needs to be seen in this light. What is essential to understand is not just the granting of autonomy but how such autonomy is to be implemented. It is also important to examine the nature of internal governance structures, i.e. level of centralisation/decentralisation. It is equally important to ascertain what the level of autonomy granted within the institution is, whether decision making is centralised or participatory, i.e. how much of the autonomy given to the universities is passed on to the teachers, or whether it is highly centralised in the office of the head of the institution.

Further, grant of autonomy is also accompanied by efforts towards increasing accountability measures. Thus, performance evaluation, performance based contracts, performance based funding, competitive funding, external quality assurance agencies and internal quality assurance processes are indications of accountability measures. Accountability involves moving towards more output- and outcomes-based measures from input-based ones.

Further, in most discussions the notion of autonomy is placed in the context of public institutions in their relationship with the government. However, the idea can be equally applicable to private institutions in the context of their relationship with the managers/owners of the institution and of the regulations pronounced by the government.

Moving ahead with the idea of creating an empowered structure of the Board of Governors in the university system to the extent of appointing power of the Head of institution is laudable. But its operationalisation would require a deeper examination. Governance structures across the universities are not uniform. Different structures also vary in terms of their powers which are derived mainly from the source of their creation. Governance structure in a university in India may consist of a Board of Governors/Governing Board (GB) chaired by the Chancellor who may be the Governor in case of state universities, a nominee (an eminent academic)of the government in Central universities, a Syndicate, a Senate, an Academic Council, a Finance Committee, Board of Studies etc. The GB gives broad policy guidance; Syndicate takes decisions on administrative and financial matters concerning the institution. The Senate or Academic Council is the

academic decision making body in a university. Meetings of both the Syndicate and the Senate are chaired by the Vice-Chancellor.

The Chancellor of the university is the chairman of the university's Council or Court. The Chancellor nominates members of the Council, presides over the Council meetings and convocations to award degrees, appoints Vice Chancellors, and Pro-Vice Chancellors. The Vice Chancellor needs to mediate between these bodies, teacher unions, employees' unions and student representatives to facilitate a smooth functioning of the university. Most of the affiliated colleges have their own Governing Body/Board of Governors.

At times the Minister is the chairperson of the university Council or governing body. This trend is changing whereby an eminent educationist is selected as the Chancellor of a university. For example, many of the institutions of national importance and central universities enjoy considerable amounts of autonomy. What makes the difference is, perhaps, the Governing Bodies of these institutions. The governing boards of IITs, IIMs, Central Universities, IISERs, NITs etc., have a large number of academics and include only a limited number (one or two) of officials of the government. Many of them are headed by eminent educationists. The boards in these institutions have the freedom to design academic programmes, set research priorities, and decide on staffing etc. In other words, these institutions, although funded by the government, experience minimal interference and control by the government and they enjoy substantial autonomy in practice.

There are other centrally funded institutions with governing bodies which have a larger number of government officials as members. The situation is similar in state funded institutions. In many institutions and in many situations the interference by the state in all aspects of the university administration is very visible. In case of college level institutions offering mostly undergraduate study programmes, the degree of control exercised by the state and the directorates of higher education seems to be substantial in most areas of activity. They are in a sense over-regulated and controlled by the government.

The nature of governing bodies and their authority to take decisions on crucial issues are important elements in the exercise of autonomy at the institutional level. In some cases there are too many members in the boards who are closer to the ministries than to academics. The possibilities of exercising autonomy will be less in such situations when compared with a situation where most of the board members are closer to academics.

The policy specifically proposes creation of an empowered autonomous structure of Board of Governors at the institutional level. There is the need for a review to assess and ascertain the new governance structures such as Board of Governors at the institutional level with State Acts and Statute of the universities. Similarly, it may also necessitate a redefinition of the power and responsibilities of the Chancellor/Visitor. The composition of the BoG is very important in this regard. For ensuring autonomy of the institution, it must be kept away from any political interference in any form.

10.4.2.2 Leadership Development Strategies:

There have been increasing challenges from leading educational institutions, in the wake of changes in the role of educational leaders and organisational practices, and the volatility in higher education climate. This calls for revisiting the leadership strategies at the federal, state and institutional levels.

The New Education Policy 2020 has flagged the theme of leadership as central to bringing about the desired changes in education at large and higher education in particular. There is a need to build performance culture with institutional development along with creativity and innovation. Team work with diverse workforce needs to be laced with technology under the deft leadership of a visionary. All these can be achieved with

institutional arrangements for leadership development at the national level — at par with top international institutions of higher learning across the globe.

The typology in the new policy envisages changes at differentiated levels: for the research universities, for the teaching universities and at the college level. Leadership development strategies have to be worked out accordingly.

Research Universities

Research in higher education is very important for the growth and development of human resources as well as the social, economic and scientific development of the country. Thus, at the federal level, Advanced Academic Leadership Centres need to be established for training the current Vice Chancellors and Registrars, as well as the potential Vice Chancellors and Registrars, and any other positions of leadership. There can be 10 such dedicated research-based training centres, with the following objectives:

- To provide orientation to senior academic personnel for visionary leadership and strategic planning of institutions;
- To enable senior academic personnel to lead the academic as well as administrative teams, and diverse workforce, through positive work culture;
- To facilitate senior academic personnel to competently deal with leadership challenges that arise in research institutions;
- To bring in performance culture and efficiency in institutions, focussing on research in India;
- To facilitate innovation and creativity in research, and overall effectiveness of the institutions; and
- To explore technology for both deeper engagement and wider delivery.

The following themes may be delved into and dilated upon in both the long and short term training programmes:

- Recent Reform Initiatives in Higher Education
- Widening Access, Equity and Diversity in Higher Education
- Quality in Higher Education: Accreditation and Ranking
- Improving Teaching-Learning and Technology in Higher Education
- Enhancing Learning Outcomes and Employability
- Financing Options and Strategies for Resource Mobilisation
- Managing Autonomy and Accountability in Higher Education
- Developing Research Capacity in Higher Education
- Internationalisation and Globalisation of Higher Education
- Leadership: Strategic Planning and Management.

These centres may have foreign collaboration with top 100 world ranked universities, on rotation basis. The potential Vice Chancellors and Registrars may be selected on strict selection criteria and they may be trained at both the Indian and foreign collaborating universities. This effort will infuse the performance culture among the leading research universities, and set benchmarks for the Indian institutions to follow.

Teaching Universities

Quality teaching has become an issue of importance as the landscape of higher education is undergoing continuous changes. Students are considerably diversified, both socially and geographically, and modern technologies have entered the classroom, thus modifying the nature of engagement between the students and their teachers. Research points put that quality teaching is student-centred, and therefore, pedagogical skill, student mentoring, training and innovation in evaluation need a fresh approach and strategies.

As far as the state level is concerned, there are approximately 400 (predominantly) teaching state universities (AISHE Report of 2018-19).

Similarly, at the State level, for teaching universities, there is a need to establish around 25 Leadership Centres, preferably located under the state governments. These centres will work with current Vice Chancellors and Registrars, and potential Vice Chancellors and Registrars, as well as Heads and Deans, Finance Officers, and other leadership positions.

The proposed 25 centres will need to work for the following objectives:

- To provide orientation to senior academic colleagues for visionary leadership and strategic planning of institutions;
- To enable senior academic colleagues to lead the academic as well as administrative teams, diverse workforce, through positive work culture;
- To facilitate senior academic colleagues to competently deal with leadership challenges that arise in teaching institutions;
- To bring in performance culture and efficiency in institutions focussing on teaching in India;
- To facilitate innovation and creativity in teaching and learning, and overall effectiveness of the institutions; and
- To explore technology for both deeper engagement and wider delivery.

The following themes will be delved in and dilated upon in both the long and short term training programmes:

- Recent Reform Initiatives in Higher Education
- Widening Access, Equity and Diversity in Higher Education
- Quality in Higher Education: Accreditation and Ranking
- Improving Teaching-Learning and Technology in Higher Education
- Enhancing Learning Outcomes and Employability
- Financing Options and Strategies for Resource Mobilisation
- Managing Autonomy and Accountability in Higher Education
- Developing Teaching Capacity in Higher Education
- Internationalisation and Globalisation of Higher Education
- Leadership: Strategic Planning and Management.

The training programmes will be helmed by resources persons who have participated at the federal level.

Colleges

Colleges are the heart of higher education. Good leadership at this level will, in turn, have a snowball effect on the growth and development of the higher education system at large. As far as colleges are concerned, there are approximately 40,000 colleges (AISHE Report of 2018-19).

At the college level, there can be leadership training for college principals under central universities, and college principals under state universities. The objectives of these leadership training programmes will be:

- To provide orientation to college principals for visionary leadership and strategic planning of undergraduate teaching and sectoral understanding;
- To enable college principals to lead the academic as well as administrative teams, diverse workforce, through positive work culture;
- To facilitate college principals to competently deal with leadership challenges that arise in undergraduate teaching institutions;
- To bring in performance culture and efficiency in institutions focussing on teaching in India;
- To facilitate innovation and creativity in teaching and learning, and overall effectiveness of the undergraduate teaching; and
- To explore technology for both deeper engagement and wider community dissemination.

The following themes will be delved in and dilated upon in both the long and short term training programmes:

- Recent Reform Initiatives in Higher Education
- Widening Access, Equity and Diversity in Colleges
- Quality in Colleges: Accreditation and Ranking
- Improving Teaching-Learning and Technology in Colleges
- Enhancing Learning Outcomes and Employability
- Financing Options and Strategies for Resource Mobilisation
- Managing Autonomy and Accountability in Colleges
- Developing Teaching Capacity in Colleges
- Internationalisation and Globalisation of Colleges
- Leadership: Strategic Planning and Management

Given the diversity in the data, three different kind of leadership strategies need to be pronounced clearly.

Institutional Arrangement for Leadership Development in Higher Education			
	Funding		
Leadership Development at Federal Level Research Universities (Central Univ., IITs, other INIs)	Federal Government	10 Advanced Academic Leadership Development Centres	Training the current Vice Chancellors and Registrars, as well as the potential Vice Chancellors and Registrars who will be selected on strict selection criteria; and any other leadership position.
Leadership Development at State Level Teaching Universities	State Government	25 Leadership Centres Resource Persons will be people who have leadership training experience abroad.	Training current Vice Chancellors and Registrars, and potential Vice Chancellors and Registrars, as well as Heads and Deans, Finance Officers, and other leadership positions.
Leadership Development at College Level	Federal Government	Colleges Principals under Central Universities	Training of College Principals for effective undergraduate teaching
	State Government	State Principals under State Universities	Training of College Principals for effective undergraduate teaching

The Federal Framework of Educational Governance and Strengthening of CABE

The proposals for reform of educational governance through a restructuring of the existing structures or creation of new structures of governance, as recommended under the NEP2020, can play a very important role in improving the functioning of the system along the acclaimed principles of New Public Management in governance. More specifically, it envisions a governance system based on the idea of improving efficiency of the system and effectiveness of governance while maintaining the economies of scale. Accountability and transparency are intertwined concerns and attributes, closely linked to the idea of a new mode of governance. Autonomy has been seen as an important requisite of outcome based governance of education at various levels. Indeed, the proposed reforms may have important ramifications in the federal framework of governance of education. Education as a concurrent responsibility of the union and states necessitates a better understanding, coordination and coherence in the implementation of various provisions contained in the NEP 2020. The idea of cooperative federalism in education has to be adhered to in making the implementation of the policy a success. Needless to add, the idea of cooperative federalism has been time and again reinforced by the NITI Aayog also in its documents and vision of improving governance, through cooperative partnership between the union and states. This will require ownership on the part of the states. Any form of 'coercive federal model' of policy implementation may prove to be a failure. Similarly, financial strings or financial purse associated with implementation policy may work as a transitory mechanism for pushing the agenda of policy reforms, but this may not create a sense of ownership among the states. Hence, successful implementation of the policy is contingent upon a cooperative model in our given case of structure of federation and the constitutional mandate. It is this context that calls for a closer view on federal dimensions in operationalisation of policy. Implementation strategies need to be worked out accordingly.

10.4.3 *Federal Issues in the Implementation*

There are a number of areas which may have federal implications in the implementation of policy. Some of the policy goals which invite immediate attention include the goal of increasing enrolment and participation of students in both schools and higher education, addressing the issues of equity and implementing the equity related provisions, ensuring an adequate number of teachers in school and higher education, improving infrastructure and facilities in existing institutions, opening up new institutions across the regions, states and districts; ensuring better ICT facilities etc. All these goals can be achieved uniformly across the states only if sufficient resources are available across the units. But the case is not the same. Varying resource capacity of the states and disparities among them could be important impediments in implementation of the policy provisions. A cautious approach needs to be adopted for ensuring equity and minimising further disparities in educational access, opportunities and resources. The fiscal resource base needs to be ascertained. A continued dialogue and understanding between the union and states for ensuring resource availability is needed.

Besides the above critical concerns, it is equally important to see that the proposals of restructuring or creating new structures in educational governance in both school and higher education are properly addressed from a federal perspective, keeping in view the differential situation of states. Building an environment of trust is necessary condition for introducing reforms as well ensuring their proper implementation. This will require multipronged strategy on the part of the union government. Legislative measures and subordinate legislations as well as incentives structures could be important tools in the strategies for implementation of various proposals of governance reforms in education, but these may have their own limitations. Indeed, proposals of reforms cannot be left behind. The need is to create such environment and conditions that can help in smooth implementation of the governance reform proposals.

The four major proposals relating to restructuring administration and governance of school education, outlined in an earlier section, separation of power and responsibilities between the Department and Directorate of education; State School Standard Authority, realigned functional responsibility of school boards corresponding with National Assessment Centre; semi-autonomous structure of school complex. These may not be essentially errant points in implementation but the policy needs to be pursued in a manner that gets gel with the capacity and requirements of the state.

The proposed reforms in case of higher education, however, may have serious implications in implementation. For example, the policy proposes to introduce an empowered governance structure of Board of Governors in case of higher education institutions. This will require repealing provisions in the state Acts, amendment in statutes and ordinances of the universities. The role of the bodies, variously known and constituted across the states such as University Council, Court, Governing Body, Board of Management, Executive Council, Syndicate, etc, need to be redefined and aligned with the new structures. In case of centrally funded institutions, the proposed empowered structure of BoG may be put in place with amendments in the central Acts. Moreover, these structures are already in place in case of IITs and IIMs. Interventions will be required mainly in case of central universities. Similarly, the proposal of transforming the regulatory system along the line of creating four verticals under an overarching structure of HECI is a welcome idea. However, the implementation of these policy proposals for governance reforms may be a point of contention between states and the union. It may be construed as intervention in the jurisdictional areas of the states' rights, especially relating to the power and role of states in the establishment and control of universities and colleges. There may be an issue of mismatch between financial obligations of the state and actual control on

the institutions. The proposed appointment of the head of the institutions by the BoG may cause a conflict with the provision in the state Acts wherein the role of the Governor as Chancellor of university of utmost importance. Being a federal subject, this will requires strategic intervention through federal consultative bodies. It may not be out of place to mention that the CABE could act as an important federal body for policy coordination and implementation if it emerges as an empowered institutional structure of federal coordination. The policy proposes to strengthen CABE both in terms of the structure and mandate. However, the details of such proposals are not indicated in the policy. The ensuing section reflects on this issue as to how to operationalise the idea of strengthening CABE.

10.4.4 *Strengthening the CABE*

The proposal of strengthening CABE (NEP, p.60) may prove to be an important step towards creating an environment of trust and confidence as well as better possibilities of coordination between the union and states in monitoring and implementation of the policy. The effectiveness of a body like CABE may be ascertained on five indicative parameters: i) mandate of the body; ii) authority and power; iii) composition; iv) frequency and regularity of the meetings; and v) impact of deliberations on actual outcome. Outcome, in turn, may be measured in terms of actual policy decisions and their culmination in the framework of implementation. Given the importance of the policy proposal of strengthening the CABE, it is necessary to examine the effectiveness of the CABE on the above mentioned parameters before carving out strategy of its operationalising the proposal. It is important to examine existing structure and composition, mandate and process of decision making in CABE in order to provide well informed suggestions along with the required details as to ensure that the structure emerges out as an important *federal body corresponding with the spirit of cooperative federalism*.

Background of CABE and Its Current Scenario

Importance of a body like CABE was recognised as early as 1919-1920. The background of setting up of this institutional structure was informed by the federal idea of provincial autonomy in the matter of decision making relating to educational issues. However, pursuing this federal idea through the institutional structure of CABE could not take a definite shape in subsequent years. Though it was established in1920, it got dissolved in 1923 as a measure of economy. It was revived in 1935 and has been in existence ever since but with many gap years in its constitution and working. Though it has not been functioning as a regular advisory body during all these years, it has acquired an important place as an advisory-consultative body in case of educational policy making exercise during the last two decades. A cursory glance over the number of meetings of the CABE held, the tasks assigned through constitution of subcommittees, the items of agenda placed in the meetings, observations and suggestions made by the members on different issues of policy concerns during these years indicate the importance accorded to this body. The body has been more active and functional during these years as compared to earlier years. The resolutions adopted during the last two decades concerning the CABE are equally important and they are the markers of governmental willingness to promote the idea of consultation through this structure. Despite such steps it has not emerged as a truly federal consultative and coordinating body. The available data relating to the frequency of meetings, agenda items for discussion, deliberations in the meetings, participation of the members in discussion, actual decisions taken and pursued for action and implementation over the years of its constitution and functioning suggest that there is still a vast gap between role can play and it has played.

10.4.5 *Operationalisation Strategy*

The mandate, constitution and composition of the CABE, the procedure of transacting the business, nature and validity of the decisions taken in the CABE need to be clearly worked out. This is a necessity of the time as many decisions may require to be taken in the area of education in years to come. This will necessitate better coordination between the states and then union. In this regard following steps may be taken for strengthening CABE:

- The CABE may not emerge as an effective body unless it is envisaged and promoted as a body of federal decision making. It may be accorded the status of a statutory body acting as forum of federal deliberation, negotiation and decision making instead of acting merely as a departmental advisory/ consultative body. The present statue limits its mandate and power to take decision on crucial issues of concern in education. In this regard a Supreme Court judgement in 2002 in case of Ms Aruna Ray vs Union of India is an important reference point with regard to an understanding of the *locus standi* of the CABE. The judgement had affirmed the point that CABE is merely an advisory body and, therefore, it is not necessary to take approval of the CABE in the matter of educational initiatives by the government. Taking a constitutional position under Article 263, it may be accorded the status of a body of interstate and union-state coordination.

- Tenure of the CABE is also important. It may be converted into a regular body instead of constituting it after every three years by the government in power. It must function as a body, irrespective of the change in the government.

- Composition of the body at the moment does not represent the character of a federal body of decision-making and policy coordination in the spirit of partnership between the union and states. It is overrepresented by the ex-officio members representing the government and advisors and reflecting less representation and weight of the states. The role of the government officials and nominated members may be of consultative and advisory nature whereas the role of the members representing states may be more in terms of actual decision making. The composition of the body need to be changed giving due presentation to states and less load of governmental officials or members representing the union government. The following Table gives an idea of its composition as per the existing structure and also provides justification for changing its composition as per the necessity of promoting it as a body of decision-making federal in nature.

- Frequency of the meetings of the CABE is also an issue of concern. For many years CABE has remained dormant or virtually inactive. Its functioning has also been affected by the change of the government as well as policy priority of the government in power over the decades and years. The available data indicate that even if CABE has been in existence formally, the body has not met for more than a year. It has not been consulted even on those issues which may require federal consultation. If we see the number of meetings held over the years, this point becomes more obvious and apparent. Between 2004 and 2019, only nine meetings were held (54^{th} to 65^{th} meetings of the CABE). The average number of meetings is less than one in a year. Therefore it is necessary to increase the frequency of the meetings for making this body more active and effective. The frequency of the meetings may be increased up to at least twice in a year and there must not be a gap of more than six months between two meetings.

- Though the post of Chairman may rest with the Hon'ble Minister of the Ministry of Education, the Union of India, the post of Vice-Chairman may be filled by the Minister in charge of Education from

the state. The Vice-Chairman may fill on the basis of nomination/election by the other education ministers of states. The same state/person may not ordinarily be elected/nominated for the second term. Representation in the body should also reflect diversity.

- There is need to have a permanent Secretariat/ office of the CABE with adequate staff. A Joint/ Additional Secretary level officer of the Government of India may be given exclusive responsibility of the CABE.

Further exercise of detailing out the mandate, composition, rule and procedures for transacting business, and the policy decision outcome in terms of their implementation may be worked out. Developing a blueprint of a strengthened structure of CABE as a federal decision making body is need of the hour.

CHAPTER

11

Operationalisation of National Educational Technology Forum

CHAPTER 11

Operationalisation of National Educational Technology Forum

11.1 Policy Goals and Objectives of NETF

THE new National Education Policy (NEP 2020) proposes to set up a National Educational Technology Forum (NETF) which will serve as a platform to better the ideation process, improving learning, assessment, planning and administration.

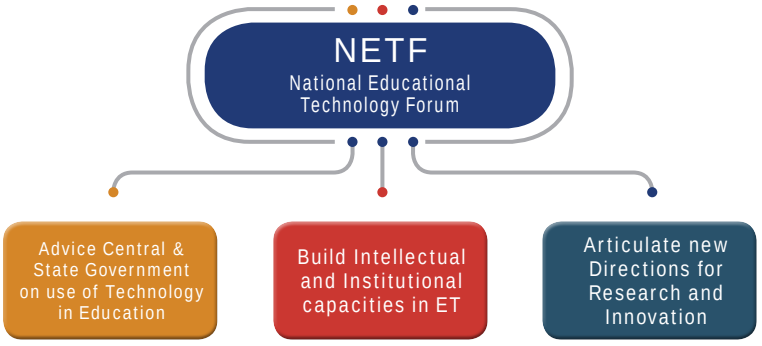
With the help of technology platforms, the policy states that technological advancements will be practised at all levels of education to develop classroom practices, support teachers' professional development, enhance educational access for all groups and administrative management. The policy says, "While a number of new institutions may be developed to attain these goals, a large part of the capacity creation will be achieved by consolidating, expanding or improving existing higher educational institutions."

The NEP also suggests developing more virtual labs using Divyang-friendly education software and increasing access to education and schools which are digitally equipped.

- Through the technology forum, new technologies like artificial intelligence, block chain, machine learning, smart boards, computing devices, adaptive computer testing for student development and other forms of educational software and hardware will be integrated into all levels of education to improve classroom process, support teachers' professional development, enhance educational access for disadvantaged groups and streamline educational planning, administration and management, the draft said. NETF will also facilitate decision-making on the induction, deployment and use of such technologies by providing educational institutions, governments and other stakeholders the latest knowledge to consult and share the best practices, the draft said. The NEP 2020 has set out to produce e-content in eight regional languages to encourage digital content and technology as there is a digital push for education in times of Covid-19-induced lockdown. "In online learning, most of the time our focus is on English or Hindi. However, the NEP envisages to develop e-content in eight regional languages — Tamil, Telugu, Kannada, Malayalam, Gujarati, Marathi, Bengali, Oriya," the draft reads.

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.



The Core Functions of National Educational Technology Forum are to:

a. Provide independent evidence-based advice to Central and State Governments agencies on technology-based interventions;
b. Build intellectual and institutional capacities in Educational Technology;
c. Envision strategic thrust areas in this domain; and
d. Articulate new directions for research and innovation.

- **Technology integration into educational processes** (e.g. support translation, act as a pedagogical aid, facilitate continuing professional development, online courses, etc.) will be optimised through digital repositories, teacher preparation to use technology, qualified support and research.
- **The National Repository of Educational Data** will maintain all records related to institutions, teachers and students in digital form.
- **Centres of Excellence in Educational Technology** will be set up to undertake research and support use of technology.
- **Training and incentives for teachers**: Teachers will undergo rigorous training in learner-centric pedagogy and on how to become high-quality online content creators themselves using online teaching platforms and tools. There will be emphasis on the teachers' role in facilitating active student engagement with the content and with each other.
- **Online, teaching platform and tools**: appropriate existing e-learning platforms such as SWAYAM, DIKSHA will be extended to provide teachers with a structured, user-friendly, rich set of assistive tools for monitoring progress of learners. Tools such as two-way video and two-way audio interface for holding online classes are a real necessity.

11.2 Issues and Challenges

The policy recognises the importance of technology and envisages the establishment of the National Educational Technology Forum (NETF), which will operate as a platform for free exchange of ideas on the use of technology to enhance learning, assessment planning and administration for school and higher education.

The policy calls for investment in digital infrastructure, development of online teaching platforms and tools, creation of virtual labs and digital repositories, training teachers to become high quality online content creators, designing and implementing online assessments, establishing standards for content, technology and pedagogy for online teaching-learning. The policy envisages the creation of a dedicated unit for the purpose of devising the development of digital infrastructure, digital content and capacity building to supervise the e-education needs of both school and higher education.

The NEP weaves the digital thread across the very fabric of the education system giving the 'digital' the attention it warrants. Technology adoption resonates across all facets of education in the new policy, be it for online learning, e-programme delivery, training or e-assessments.

The policy recognises the challenges arising on account of the widespread use of Artificial Intelligence (AI) and highlights the need to adopt changes occurring on account of increased use of AI across sectors. It has tasked the NETF with identifying and categorising the emergent technologies based on their '*potential*' and '*estimated time frame for disruption*' and to present a periodic analysis of the same to the DOE, who will then formally identify such technologies which require appropriate responses from the education system.

Several educational technology start-ups are using technologies like augmented reality (AR), virtual reality (VR) and mixed reality (MR) to provide simple yet effective education solutions. The use of AR and VR has massively impacted the efficiency with which e-learning is offered to students and the way it assesses their performance. The learning resources are static in nature and this need has been addressed by the ed-tech start-ups, which are transforming traditional methods of education. In light of the emerging 'disruptive technologies,' the policy is pioneering as it notes the need to generate awareness as well as conduct research on various aspects of the emerging disruptive technologies, including concerns pertaining to data handling and protection (NEP, pp. 56, 57, 23.8).

Animation, gamification, 3-D visualisation and AR-VR, and interactive case studies may be introduced to inculcate multidisciplinary experimental leaning. A more modular approach for e-content development will further reduce the efforts required for periodic upgrading. The NEP seeks to transform learners in to truly global citizens, new content needs to be developed keeping in mind the larger learning goals.

Opportunity for Ed-Tech and Assistive Technology Players to Collaborate with the HEIs: New Education Policy lays emphasis on technology-based learning, delivery and capacity building solutions. Hence, Ed-Tech players will have the opportunity to develop content, delivery platforms and learning management systems for HEIs seeking to invest in digital learning. Additionally, they may also collaborate with HEIs to offer degree programmes as well as certificate programmes in Higher Education. Assistive devices, technology-based supportive tools and language-appropriate teaching learning materials will be made available to assist specially abled students to integrate more easily into classrooms. Implementation of this technology will help promote inclusivity and is also expected to provide opportunity to players in the assisted technology space.

11.3 Implementation Strategies

As per a government survey conducted for the period July 2017 to June 2018 and published in November 2019, in rural India, only 4.4 per cent of households have computers as against 23.4 per cent of urban households; nearly 14.9 per cent of rural households have internet facility as against 42.0 per cent of urban households. As per the same survey, in rural areas, among persons aged 5 years and above, 9.9 per cent were able to operate a computer as against 32.4 per cent in urban areas, and 13.0 per cent of rural users were able

to use the internet as against 37.1 per cent in urban areas. Research has shown that internet penetration in urban areas is higher, but rural penetration is growing at a faster rate. Even then, access to the internet was almost always through mobile phones in both urban and rural areas.

In the context of education, it is important that each student, in urban and rural areas, has access to digital hardware, whether in the form of smart phones, computers or tablets, exclusively for their use. As of today, a majority of students from under-privileged economic backgrounds have limited or no access to exclusive digital devices, internet or even electricity.

While the policy does note the existence of these limitations and the need to eliminate it through concerted efforts, such as the Digital India campaign and the availability of affordable computing devices, it is necessary that practical solutions are found around these issues and that efforts are supplemented with access to other amenities such as power supply, basic infrastructure as well as general awareness on the importance and usage of technology.

The 'humanelement' of education cannot be overlooked and technology can be used only as an auxiliary tool to amplify the learning experience. It is also pertinent to assess the way technology is used, processed, transferred and stored, and necessary safeguards must be built in to protect the privacy of the users and protect them against data thefts. While the policy is a novel and progressive document, acknowledging the invaluable role of technology in facilitating learning and teaching, it is essential to develop a coherent plan of action for fostering technological proficiencies to aid successful engagement with technology (and its future advancements), while providing effective safeguards for data protection and data privacy.

The NEP focuses on developing and enhancing an existing national-level repository of digital learning resources as well as e-learning public platforms like DIKSHA and SWAYAM. It talks about the development of better online assessment or examination platforms, leading to a host of new areas such as development of digital question banks. Innovative Virtual Labs will be utilised to improve access to digital learning for socially and economically disadvantaged groups. The educational technology companies along with the GOI ICT initiatives [DIKSHA and SWAYAM, etc.] are uniquely positioned to assist in the execution of various goals envisioned under the policy. The educational technology companies, along with the GOI ICT initiatives [DIKSHA and SWAYAM, etc.], can collaborate with educational institutions as well as develop customised online platforms/courses to increase reach among Indian students. The policy also presents a significant opportunity for cooperation between the various industry stakeholders and regulatory authorities/ educational institutions. In this regard, the Internet and Mobile Association of India has recommended a partnership between the educational technology industry and the NETF, which will help streamline research and enable the NETF to adopt industry-led best practices.

The policy appropriately lists down some of the critical challenges that lie ahead in implementation, including affordability and access to the internet and devices, teacher readiness for using blended learning tools and the massive task of continuous and effective online examination.

Overall, the success of the policy will be contingent on the means and mode of its implementation, as well as the ability to effectively integrate the objectives of the policy, within the existing initiatives and by engaging the relevant stakeholders in the effective implementation of the policy. The policy shows the awareness that education in the future will involve greater dematerialisation and digitalisation of content.

CHAPTER

12

Branch Campuses of Foreign Universities in India

CHAPTER 12

Branch Campuses of Foreign Universities in India

12.1 Policy Goal

THE National Education Policy 2020 (NEP 2020) states that "high performing Indian universities will be encouraged to set up campuses in other countries, and similarly, selected universities, e.g., those from among the top 100 universities in the world will be facilitated to operate in India. A legislative framework 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."

12.2 Issues and Challenges: Different Models of International Branch Campuses

The International Branch Campus (IBC) of a foreign university is, according to Garett, "an entity that is owned, at least in part, by a foreign higher education provider; operated in the name of the foreign education provider; and provides an entire academic programme, substantially on site, leading to a degree awarded by the foreign education provider." This definition excludes joint-degree programmes, twinning arrangements and overseas campuses serving students from the home university.

The five prominent IBC models existing in different parts of the world with different organisational structures and academic objectives are given below:

	Type	Features	Pros and Cons	Examples
1	Self-funded	Home institution sets up an IBC in the host country independently of external support	Financial risks involved due to expenses associated with building and maintaining a physical infrastructure in another country.	US' Webster University in The Netherlands
2	External funding from host country governments	Partially supported by the host country in terms of buildings, facilities, or scholarships	Host governments see IBCs as part of their economic growth strategy and provide various incentives to attract specific institutions.	UK's University of Nottingham in Ningbo, China & US' Texas A&M University at Qatar

	Type	Features	Pros and Cons	Examples
3	Support from private companies/ organisations	Partially supported by private companies, in terms of buildings, facilities, or scholarships under the host country's specific regulations	Private sector receives a stake in the revenues produced by the IBC. This arrangement may lead to conflicts between academic and business interests in the long run.	Partnership between University of Nottingham, Boustead Holdings Berhad and YTL Corporation Berhad for the University of Nottingham campus in Malaysia
4	Facilities lease	IBCs function from leased facilities provided by government or private sector in designated zones	Multiple institutions rent space in the same building.	Dubai International Academic City, UAE
5	Academic collaboration with a local partner	IBCs are built within the partner's campus	Located in the facilities owned by another college or university. IBCs under this model offer standalone academic programmes and operate separately from the partner institution.	Singapore Institute of Management's partnership with The University at Buffalo (UB) School of Management, located at the State University of New York at Buffalo for its Bachelor of Science degree programme in business administration offered in Singapore.

12.3 Implementation Strategies

12.3.1 *Strategies to Attract 'Top 100' Universities*

The NEP 2020 states that "universities from among the top 100 universities in the world will be facilitated to operate in India." Following strategies may be helpful to attract them to the country:

- *Targeted approach*: The government should initially target universities from the 'top 100' category that have been successful in operating branch campuses in different parts of the world. For example, universities like Monash University, Australia, are currently in the process of establishing a new branch campus in Jakarta, Indonesia and University of Nottingham, United Kingdom. Further, universities from the 'top 100' category that do not have international campuses now, but have expressed interest in doing so, may also be approached. Institutions that offer programmes relevant for the development and skill needs of the country, are willing to facilitate transfer of technology and knowledge, and operate in a socially responsible manner should be given priority.
- *Creation of a dedicated agency*: A dedicated agency under the Ministry of Education may be established and assigned tasks such as identification of 'top 100' universities interested to establish international branch campuses; ascertaining their experience and reputation if they already have established IBCs; establish linkages with aspiring foreign institutions and hold preliminary discussion with them on behalf of the government.

- *Investor-friendly rules:* The Central Government should invite foreign universities by showcasing the strong, but investor friendly Act and Regulations that would reduce potential risks for aspiring institutions for exploring various partnership opportunities in India.
- *Partnership opportunities with private and public service providers:* IBCs should be allowed to function in partnership with existing higher education institutions in the country and state-supported service providers located in education hubs/cities, information technology parks, etc.
- *Education cities:* Creation of higher education hubs in select cities of the country, funded by the Central and State Governments, would help in the vertical growth of institutions and would be attractive to foreign institutions. This would also help accommodate different branch campuses under one roof. These locations should have excellent transport and other infrastructural facilities. These may also be developed along the 'university cities' model, which proffers and sustains a diversity of allied economic activities which in turn supports the growth of a local community.
- *Information to aspiring institutions:* It is important to provide relevant information, especially regarding the rules and facilities available to foreign institutions through a dedicated portal and through diplomatic missions.

12.3.2 *Role of Incentives*

Financial and non-financial incentives have, along with other fundamental determinants, an important role in attracting the aspiring foreign institutions to the country. Following are some of the major incentives that may be helpful in realising the NEP objectives:

- *Concessions until achieving sustainability:* Demonstrating its sustainability is one of the most important criteria for a branch campus to showcase during its initial years. A critical turning point in this regard is the passing out of the first batch of graduates from an IBC. This is a sign for prospective students that the campus has a full course of study and has had success in students finishing the programme. A system that ensures incentives is of great importance during this initial period and they must be automatic and free of administrative barriers.
- *Tax exemptions:* Steps may be taken to reduce the tax burden of IBCs, especially during the initial phase, on the basis of fulfilment of the performance indicators.
- *Repatriation of surplus:* The key motivation of most of the foreign universities to establish branch campuses is generally economic than academic interests. Therefore, IBCs should be permitted to repatriate the surplus they generate after tax clearance, as is being allowed in countries such as the UAE.
- *Granting legitimacy:* These could include approval of the qualifications offered by IBCs for the purposes of employment and further education in the country, financial assistance to offer specific academic programmes, research grants, and scholarships to students, etc. The government could also try to augment the export potential of Indian higher education market by partnering with the IBCs through existing programmes such as 'Study in India'.
- *Flexible visa rules:* Flexible visa rules for foreign students and foreign faculty at the IBCs are a prerequisite for the smooth functioning of a branch campus.

12.3.3 *Ideal Regulatory Environment*

A clear and liberal regulatory framework would have a significant impact on attracting aspiring foreign institutions to the country. The government should focus on identifying and eliminating unwanted barriers in this regard.

The governance mechanisms to be proposed for regulating the branch campuses should have a long-term road-map and, therefore, the bill that would be enacted to facilitate the establishment of IBCs and to regulate their operations should have the following features.

- *Act and Regulations:* The Central Act should clearly specify the criteria for selecting the foreign universities that are eligible for establishing IBCs. The Regulations of the University Grants Commission (UGC)/ Higher Education Commission of India (HECI) should be framed in accordance with this parent Act and it should clearly elaborate the process and norms to be followed.
- *Status:* IBCs should be given the status on par with private universities in the country.
- *Ownership:* International branch campuses should be allowed to establish Indian branch campuses with or without a local partner by utilising the 100 per cent FDI provisions through automatic route.
- *Recognition of institutions and programmes:* Recognition for the institutions and validation of programmes could be provided by UGC/HECI. All higher education programmes offered by the IBCs in the country must be approved by the UGC/HECI in accordance with the relevant regulations. The proposed Act should have clear provisions about the recognition of the qualifications obtained from IBCs located in India.
- *Accreditation of programmes:* A new academic accreditation body needs to be created in partnership with prominent international agencies that are experienced in the performance analysis of 'top 100' universities. It is important to review the equivalence between the programmes offered in the Indian branch campuses by recognising the role of both home and host institutions. The National Accreditation Council (NAC), a 'meta-accrediting body' as proposed in the NEP 2020, could accommodate this specific accreditation agency. IBCs may also be allowed self-accreditation on the basis of performance indicators and compliance with relevant regulations.
- *Name of the provider:* There should not be any difference in the name of the home campus and host campus. The degrees awarded by the IBCs in India should be indistinguishable from the home campus.
- *Academic and administrative autonomy:* The foreign university controlling the IBCs should be given adequate freedom in all academic matters. Although IBCs may be required to seek approval from UGC/ HECI prior to offering courses, decisions on the proposals submitted by the IBCs should be considered by UGC/HECI in a time-bound manner.
- *Adjusting the curriculum:* IBCs may be encouraged to offer programmes that may be different from the home institutions if they are relevant to the economic and social context of India.
- *National-level coordination:* Since foreign institutions are involved, it would be ideal to have a national-level body consisting of the representatives of the relevant Central ministries and departments, NITI Aayog, various regulatory bodies such as UGC/HECI,AICTE,NAAC, representatives of professional councils, representatives of state governments where IBCs are located, etc., for the overall planning and coordination in accordance with their roles defined by the Central Act and UGC/HECI Regulations.

- *Safeguarding the interests of students and staff:* There should be clear provisions in the Act to safeguard the interests of students in the event of the collapse of the IBCs, especially for the students in completing the programmes, and they must remain the alumni of the home campus. Faculty and staff should be protected under the Indian labour laws.
- *Internal quality assurance mechanism:* IBCs should be encouraged to have an internal quality assurance mechanism which should be indistinguishable from the home campus.
- *Access to information:* Academic and infrastructural facilities at the IBC should be made available to the public through official websites. In the event of changes in the operating conditions, which includes changes in the nature of relationship between home and host institution/local partners, IBCs shall inform Indian regulatory bodies in advance with detailed steps to be taken to protect the interests of the various stakeholders. Annual reports containing information about enrolment numbers, financial information, status of programmes, achievements, etc., must be made available on the website of the university.

12.3.4 *Procedures for Establishment of Branch Campuses*

A foreign university from the 'top 100' category planning to establish an IBC should apply to the UGC, or the proposed HECI, which is going to supersede the UGC, to commence its academic operations through the Indian diplomatic missions located in respective countries. The UGC/HECI may grant authorisation for starting the academic operations on the basis of the comprehensive proposal in the prescribed format submitted by the aspiring foreign universities. The approval or rejection of application for setting up an IBC and to award degrees or any other qualifications should be on the basis of scrutinising the applications in accordance with the new Central Act and relevant supplementary regulations to be approved by the UGC/HECI to facilitate the establishment of foreign educational institutions.

The application for establishing a branch campus should include a comprehensive master plan with the broad organisational structure of the proposed branch campus, the proposed courses of study, internal quality assurance system, etc. It should be made mandatory to disclose the following information, among others, in the prescribed application format:

- Indian academic/infrastructure partners of the project
- governance structure of the institution
- programmes to be offered in the IBC
- approvals for academic programmes received from the home university and relevant regulatory and quality assurance bodies in the home country
- availability of necessary financial resources
- availability of human resources
- academic and physical infrastructure
- proposed tuition fee structure
- expected student enrolments in the first three years

- exit strategy in the event of cessation of programmes
- nature of academic relationship between home and branch campus, especially to facilitate the two-way flow of students and academics
- student welfare.

The Ministry of Education, on the basis of the recommendations of the UGC/HECI that scrutinises the applications, shall notify the list of eligible foreign higher education providers to award degrees or any other qualifications.

12.4 Challenges and Opportunities: Insights from Interviews

The perception of an IBC in the host country rests largely on the identity and reputation of the home campus. Although the names of the institutions and the degrees offered are the same, their experiences may be different. IBCs come in many forms and there have been many success stories as well as drastic failures. The domestic and international environments play an important role in this respect.

This section covers insights shared by academics and practitioners on the major challenges regarding the operation of IBCs and how to deal with them effectively in the Indian context. Excerpts from the interviews conducted with Professor Abid Khan, Deputy Vice-Chancellor and Vice-President (Global Engagement), Monash University, Australia; Ms Avanti Redkar-Sachdeva, Senior Project Manager, Monash University, Australia; Professor Jason Lane, Dean, School of Education, University at Albany, State University of New York, USA; Ms Michelle Hoodbhoy, Director, Transnational Education & Channel Management, Monash University, Australia; Dr. Nitesh Sughnani, Director, Higher Education Classification & Rating Framework, Knowledge and Human Development Authority, Dubai, UAE; Professor NV Varghese, Vice-Chancellor, National Institute of Educational Planning and Administration, India; Professor Philip G Altbach, Research Professor and Founding Director, Centre for International Higher Education at Boston College, USA, Dr Ranendra Saha, Director, BITS Pilani, Dubai Campus, UAE; Professor Richard Allen, Dean School of Creative Media, City University of Hong Kong, and Dr S Kota Reddy, Director, Manipal Academy of Higher Education, Dubai Campus, UAE, are given below:

- *Attracting top universities:* Only a few of the 'top 100'universities have IBCs as they find it difficult to maintain the same quality of the home institution in their branch campuses. Also, these institutions do not face any major resource crunch and their programmes continue to be in high demand within their existing milieus. Therefore, limiting the invitation to only 'top 100' universities may be problematic. It may be useful to consider universities from the 'top 200' of World University Rankings as well and also those universities at the top in terms of 'subject-wise global rankings.'
- *Importance of financial and non-financial incentives in a changing environment:* Most of the top foreign universities are changing their strategic priorities to address the Covid-19 related crisis. They may be more concerned about the future of their international student enrolments in their home institutions rather than establishing campuses abroad. Emerging trends also show that existing transnational education models would be greatly influenced by digital technologies in the future. Therefore, financial incentives would play a major role in facilitating cross-border mobility of institutions. Also, the experiences of Qatar and UAE show that top universities had been provided not only with infrastructural facilities but also financial support for establishing branch campuses. In some cases, host countries provided the salaries of foreign faculty at the IBCs. There should not be any discrimination towards IBCs and they should also be eligible for research funding and student scholarships offered by the government.

- *Designated free zones:* Establishing designated hubs/zones for IBCs along the lines of Dubai could be explored. These special hubs could attract IBCs and provide programmes in niche areas in collaboration with other industrial and business establishments in the same hub/zone. This model would help IBCs to invite adjunct faculty from these establishments and provide internship opportunities for their students through industry-academic partnerships.

- *Criteria for selection of an ideal model:* There are different IBC models existing in different parts of the world. The selection of an appropriate model in the country should depend upon the national priorities and availability of resources. Many top Indian institutions are currently engaged in partnership with foreign universities. These partnerships need to be reinforced and expanded to a more comprehensive level by strengthening the existing academic and research collaborations. Similarly, it should be noted that IBCs focussed on undergraduate programmes require large investments in terms of faculty salary and infrastructure and are likely to incur higher cost than IBCs focussed on postgraduate programmes.

- *Partnership model:* The government should encourage the 'partnership model' which allows existing Indian higher education institutions to collaborate with 'top 100' universities to establish branch campuses. Financial risks could be reduced to a great extent as existing infrastructural facilities could also be utilised.

- *Scope for regional education hub:* India is in an advantageous position *vis-à-vis* tuition fee and cost of living, and this could help the IBCs in India to attract a large number of foreign students. This would help the country to become a regional education hub.

- *Healthy competition and internationalisation of curriculum:* The curriculum offered by IBCs would encourage Indian institutions to creatively re-conceptualise their existing curriculum to reach international standards. An internationally compatible curriculum, in terms of learning outcomes and concepts would facilitate the inbound mobility of foreign students.

- *Dubai model with single regulatory authority:* The governance structure of the Dubai International Academic City (DIAC) with a single regulatory authority could be explored in the Indian context. The Knowledge and Human Development Authority (KHDA), Dubai, is responsible for granting license for opening up of IBCs. It also endorses new programmes, maintains quality standards, accredits degrees and repeals license in case of non-compliance with the quality standards stipulated by it. Other main features of the KHDA Regulations are: time-bound decision on various applications, flexibility in establishing IBCs (applications are invited three times a year), monitoring of quality standards once a year for new IBCs and accreditation once in three years for older ones.

- *Generation and repatriation of profit:* 100 per cent ownership should be allowed to foreign universities and they should be allowed to generate and repatriate the profits from their operations.

- *Inclusion and equal opportunity:* IBCs should be encouraged to adhere to the principles of inclusion and equal opportunity in the country. Most of the 'top 100' universities have strong diversity, inclusion and equal opportunity policies and the government should have a clear strategy to encourage IBCs to put such policies in place in India too.

The insights derived from the interviews emphasise the importance of not only establishing an enabling policy environment in the country but also to ensure the institutional capacities required to monitor the operation of IBCs in a liberal legal framework. The challenges are manifold and this implies a need for greater cooperation among various Central and State ministries, regulatory bodies and quality assurance agencies, to achieve the goals of the NEP 2020.

Conclusion

Establishing an IBC is a time-intensive and capital-intensive process. Besides, home institutions have to bear many indirect costs. They also have to follow the rules and regulations in two countries: on most occasions as a public institution in the home country and as a private institution in the host country. They also face many challenges with regard to brand dilution, high rent/land/building costs, finding talent matching to the requirements of the programme, attracting fee-paying students, etc. All these should be discussed in greater specificity while framing the Act and relevant regulations.

The government could promote diverse models of IBCs in the country. For the IBCs, remaining as a teaching focussed institution would be difficult to sustain as an institution of higher education in the long run and therefore, research should also be appropriately encouraged.

IBCs should be encouraged to play a complementary role in providing higher education in niche areas, and they should not be considered as a substitute for existing public and private institutions in the country. The regulatory role of the government is therefore, critical while operationalising the NEP 2020 objectives with regard to branch campuses.

CHAPTER

13

Operationalisation of National Research Foundation

CHAPTER 13

Operationalisation of National Research Foundation

13.1 Policy Goal

KNOWLEDGE production is critical in the development process. Research and development are not only interrelated but also multifaceted. It has forward linkages in the growth process and at the same time backward linkages in the growing periods. Indeed, the best teaching and learning processes occur in environments where there is also a strong culture of research and knowledge creation (NEP 2020, 17.6). The multifaceted nature of this linkage is being increasingly recognised. It therefore demands for an integrated or holistic approach to learning as we progress for economic and social upliftment. In this light, the knowledge production needs to highlight the vital role of multidisciplinary, interdisciplinary and transdisciplinary research. Such a focus is expected to provide the twin linkages of research to the economy and society on the one hand, and feed into the liberal and flexible learning processes and programmes in the higher education system on the other. Thereby, the National Research Foundation (NRF) will bring in cohesion among the various research endeavours of integrated and multidisciplinary character.

a. *Vision*: The NRF will catalyse and expand research and innovation, thereby making India as a superpower by 2040.

b. *Mission*: NRF transparently seeds and funds research across educational institutions in the country in all disciplines, with a special mandate to foster research and innovation in universities and colleges, including interdisciplinary research. This is not limited by any particular subject or geographic interests and is, because of a robust system of peer review, distinct from the mandates of other organisations. Thus it is critical in building the capacity of quality research in universities and colleges across the country.

13.2 Scope of the National Research Foundation

Research and innovation are more vital today than ever before because of the changing dynamics and the speed with which science and technology have been advancing around the globe. The NRF will play an active role in the promotion and advancement of research and innovation in the higher education arena in India as envisaged in the NEP. The NRF will promote basic as well as advanced high-quality research in universities and colleges in India. This will work to ameliorate the hitherto low levels of research output and further its relevance to industry and society in the country. The NRF will reshape and strengthen the existing fragmented research structures in India. The NRF will therefore support outstanding peer-reviewed research and also actively seed research in universities and colleges, in order to promote and strengthen multidisciplinary research towards sustainable development. The NRF will enable and support vibrant and high-quality research and innovation cultures across HEIs, research labs, and other research organisations. This will be achieved through generous funding and closely regulated and monitored research practices that must match with the international standards. In addition to that, it will also stimulate and synergise the

research practices in India in the direction of a more sustainable economy and society. The NRF will create a platform for debate and dissemination of research findings.

Purpose of NRF

The various purposes of NRF will be the following:

- Promote and strengthen research and innovation culture and outlook among youth.
- Provide opportunities to those from rural areas, marginalised and low socio-economic groups.
- Increase in funding and access to resources for research across domains.
- Increase the number of research seats in universities and research institutions.
- Support state level universities and colleges in funding and promotion of research.
- Enhance the quality of available research output and promote different mediums for dissemination of research.
- Act as a networking body to promote collaborations with other researchers and institutions through regulated procedures both within and outside the country.
- Together the NRF and the researchers will create new values for a sustainable development.

Objectives of the NRF

Developmental / Long-Term Objectives

- To lead India onto the path of new discoveries, innovations and solutions to existing problems by creating a culture of research and innovation that must permeate through the higher education institutions.

Short Term/ Immediate Objectives

- To create a conducive ecosystem for research and innovation culture through: catalysing and energising research and innovation in all disciplines; seeding and growing research at universities and colleges; competitive peer-reviewing processes; mentoring and facilitation; funding and monitoring and dissemination of research findings.
- To facilitate basic research including development of infrastructure and to bring forward talented researchers.
- To develop an integrated strategy to advance the frontiers of knowledge, cultivate a world-class, broadly inclusive and integrated workforce.
- To identify the research outcomes that have greater potential of knowledge transfer for the wider social causes.
- To implement such successful research through close linkages with governmental agencies as well as with industry and private/philanthropic organisations.
- To develop a transparent and competitive mechanism of funding research in all disciplines.

- To promote international cooperation and exchange in basic and inter disciplinary research across domains.
- To suggest policy recommendations to the government on various issues.

13.3 Implementation Strategies

13.3.1 *Roles and Functions of the National Research Foundation*

Roles of NRF

- Promote the culture of research across disciplines.
- Create an ecosystem of gender inclusive and socio-economically inclusive research.
- Provide funding to higher education institutions (universities — state, central, private and colleges)
- Ensure that benefit of research reaches the downtrodden segments of the society, without delay.
- Extend support to government departments vis-à-vis their research needs.

Functions of NRF

- Fund the research proposals through short-term and long-term grants.
- Establish highly specialised research laboratories.
- Establish and support research centres in universities (State and Central) and colleges.
- Support and fund doctoral and post-doctoral students.
- Bring in synergies between the stakeholders and research groups.
- Create a mechanism for monitoring and mid-course corrections.
- Strengthen the linkages between universities and their counterparts at the global level.
- Catalyse research in universities and colleges, and in institutions that have hitherto not been big players in the research scene.
- Build the capacity to do research through an institutionalised mentoring mechanism involving expert researchers across institutions.

13.3.2 *Domains / Areas of Focus*

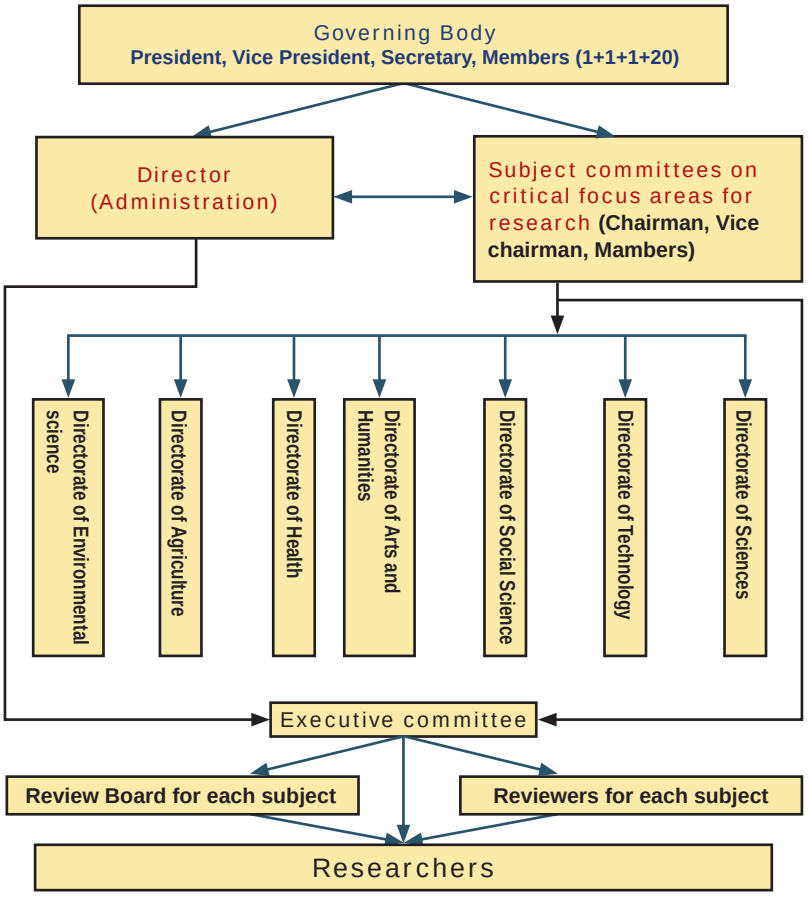
The NRF will consist of seven major divisions, namely Sciences; Technology; Social Sciences; Arts and Humanities; Health; Agriculture; and Environmental Issues. These seven domains are mainly organised by academic discipline. Various subject disciplines under each of these broad divisions will look into the subject specialisation and innovation. Accordingly, the NRF will have a pool of academicians and innovators across all disciplines, who will serve as reviewers for the research proposals. NRF will also identify mentors among the reviewers for research and innovation. The seven broad subject areas will further get classified into different individual subject areas. For example, the Sciences at the first level will have subject categories of Life Sciences, Natural Sciences, etc. At the second level, taking Natural Sciences as an example, it will have subject categories of Chemistry, Physics, Mathematics, Geosciences, etc. At the third level, taking

Chemistry, further specialisation will be listed out. This can be linked with subject code classification at the internationally accepted standards. This kind of classification of subject tree with their branches will be useful both for the reviewing and mentoring processes.

The review process is an important and almost a sole mechanism to fund the research and innovation across the globe. This review process can be made more transparent, simple, and quick by developing a web portal for the entire process for funding and encouraging research and innovation. The same will function under the Executive Committee.

13.3.3 *Structure of the NRF*

The NRF is structured under five broader hierarchical levels. The topmost layer is the Governing Body. The Director (administration) and the seven subject committees will function under the broader guidance and instructions of the Governing Body. At the initial stages of establishment of the NRF, the administration of various activities and functions of NRF will be implemented by the Director. As NRF progresses, the Director will be assisted by Additional Directors, Joint Directors and Assistant Directors. Each of the Additional Directors will be heading different functions as the number of research proposals increase in volume. The next level is Executive Committee which coordinates with the office of the Director, the respective subject directorates, the review boards and the reviewers. The organisation chart given below depicts the structure of NRF:



The governance of NRF will be executed as per the structure demonstrated above. The details of various levels of governance are explained below.

Governing Body

The Governing Board will be the custodian of the overall vision of the NRF. It is an autonomous body consisting of 23 members, with a President, Vice President, Secretary and 20 members. It is formed on a rotation basis, once in 5 years. A second term may be allowed for President and Vice President, and 80 per cent of the members can be replaced every three years. This replacement is member-specific. Two thirds of the majority must be maintained as the quorum for any major decisions and changes. The Governing Board will hold a meeting with the Director and Subject Directorate chairs at least twice a year.

It guides the government and other autonomous bodies (private and quasi) on the frontiers of research and innovation and their policy. It also plays a critical role in identifying and approving the research and innovation areas of national importance.

Selection of the President and Vice President

Eligibility: Upper age limit for appointing them can be on the lines of the criteria meant for appointing the Vice Chancellor / CEOs of an industry/ well established entrepreneurs – up to 65 years of age,but they may continue in the office till the completion of 70 years. The persons can be male, female or transgender.

Experience: She/he must have an illustrious career as academician/innovator/entrepreneur at national/ international level and should have exposure to diverse areas of academics, industry, and with adequate ground reality to where knowledge must reach all including the marginalised sections of the society from a utilitarian perspective.

Selection Process: She/he must be an eminent personality of proven national/international repute for becoming the President of NRF. Managerial, academic-administrative skills, credentials and merit of the person would form the basis for consideration to this post.

President and Vice President will be nominated by an independent body set up for this purpose constituted by the Government of India.

Roles of the Officers of Governing Body

President

As the head of NRF, President will contribute in creating a vibrant research and innovation ecosystem. She/ he will coordinate and liaison with the central and state ministries, and other stakeholders such as business, industry and international organisations. She/he would ensure that the best practices in the funding of research and innovations are employed at NRF. She/he would facilitate the process of designing policy framework.

Vice-President

Second in the NRF hierarchy is the Vice-President. The Vice-President will assist the President in preparing the groundwork for creating a research and innovation ecosystem. She/he will assist the President in coordination and liaison with the Centre, States, and other stakeholders. In the absence of President, the Vice-President would ensure the day-to-day function of the NRF. She/he would represent the President in various national and international meetings, and conferences.

Secretary

The Secretary of the NRF governing body will facilitate activities, meetings, and ensure administrative modalities for efficiently carrying out the day-to-day administration. She/he would also be responsible for preparing the minutes of all the meetings and decisions taken by the NRF governing body. She/he will also be responsible for preparation of annual report of NRF.

Members

The NRF governing body will have 20 members who are experts/distinguished scholars in their respective fields. The members will advise the President of NRF on various policy matters, promotion of research and innovation culture in higher education, best practices employed elsewhere, introduce potential collaborators from business, industry, national as well as international level. The Chair of each Subject Directorate will be a member of the Governing Board.

Director

The Director is the chief executive and operating officer, responsible for the organisation and functioning of the NRF. She/he will oversee and ensure the smooth functioning of the Subject Committees. Various activities of NRF will be set in motion by the Director. As NRF progresses, the Director will be assisted by a group of lower-level Directors at different levels, viz., Additional Directors, Joint Directors and Assistant Directors. Each of the Additional Directors will be heading different functions as the number of research proposals increases, viz., details of applied and approved proposals by subject, gender, region, etc.; details of approved proposals and sanctioned budget; budget office; mentoring the researchers / research funded institutions; deliverables (including how the deliverables / outcomes of research can be connected with either industry or society); ensure inclusiveness (across subjects, genders, regions, etc.).

Subject Directorate

Each of the Subject Directorate will have a Chairman, a Vice Chairman and 20 members for each sub-domain identified by the Subject Committee. A pool of 100 members in each domain area is selected having various specialisations as a reserve pool. Each of the Subject Directorate carries out the following functions:

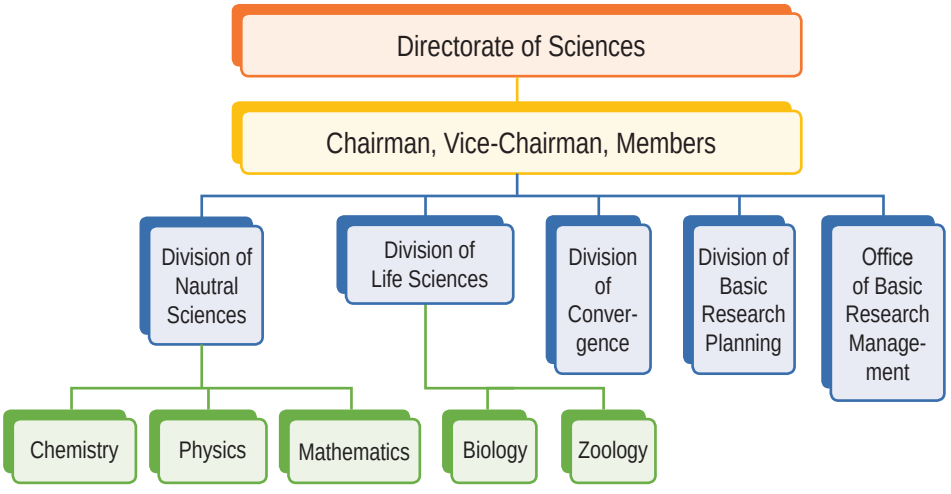
- Identify the critical areas of research that require immediate and long-term research having national significance.
- Seed, grow and facilitate research.
- Liaison between researchers and relevant branches of government, industry, different professional bodies such as DBT, ICMR, ICSSR, etc.
- Establish network across the nation for research and development across disciplines of knowledge.
- Periodically update research areas of national importance.
- Disseminate research findings in relevant professional forums, government, and generate national awareness for the same.
- Advise on issues concerning the further development and organisation of the external or national funding.

Despite these general functions, each subject directorate will have separate divisions as the NRF progresses.

Directorate of Sciences

Its role and mission will be to enable discoveries for understanding life. NRF funded research will aim at advancement of the frontiers of scientific knowledge, increasing our understanding of complex systems, and providing a theoretical basis for basic research in many other scientific disciplines. It will classify further divisions under this based on subject orientations, viz., Life Sciences, Natural Sciences, etc. At the next level, the coverage of Natural Sciences will include subject categories like Chemistry, Physics, Mathematics, Geosciences, etc. At the third level, taking Chemistry, further specialisation will be listed out. As per requirements, each of the Subject Directorates will function under six to eight subdivisions including the office for coordination and administration and another on working towards multidisciplinary and other application-oriented aspects of research. An illustrative structure of the Subject Directorate of Sciences is given below in Chart 2.

Chart 2: Illustrative Structure of Directorate of Sciences



In a similar manner, the rest of the subject directorates will be organised. Subject Committees will also review annual reports regarding progress on each funded proposal within the subject in coordination with the Executive Committee. They will be providing such inputs to the Director at regular intervals.

Executive Committee

A dedicated all-inclusive NRF web portal will be established and function under the directions of the Executive Committee. The online web portal ensures transparency in review. Based on the area into which research proposal falls, the relevant reviewers are identified and proposals are sent to them through the portal, using the subject classifications and subject codes. The reviewers will submit their comments through the portal to the Executive Committee which in turn shares them with the researcher after due consideration. All proposals received within each division in the portal will be distributed appropriately by subject to the reviewers first and then to the Review Boards of Subject Committees. The researcher will in turn look into comments, makes changes to the research proposal and submit back to the executive committee. After examining the revisions by the reviewer once again, it will be submitted to the Subject Committee for approval. The Subject Committee will take decisions in consultation with the director. The Director will send the decisions to the Executive Committee, which in turn sends to the researcher.

The review process is very transparent, simple, and quick as it is undertaken through web portal. The skilled manpower required at Director's office in selecting the suitable reviewers by considering their competencies in the relevant fields and where there is no conflict of interest can be in-built in the web portal. If the research proposals are not up to the mark, then the portal can explore whether the same reviewers are willing to serve as mentors to those researches.

Review Board

It is formed for every group of research proposal that fall under the same broad subject specialisation in each of the subdivision of Subject Directorates. As an example, a review board for Chemistry is formed as illustrated in Chart 2. This Review Board will also look into the expertise of the specialisation of the concerned reviewer in each of the subject. The Review Board undertakes the following works:

- Evaluate proposals for funding;
- Monitor the review process to ensure that set standards are being attained;
- Formulate the rules of procedure to draw up for review of the proposals submitted.
- Prepare the Guidelines for the review; it contains more details.
- Entrust the review personally with review processes which cannot be passed on to anyone else.
- Oversee the works of reviewers.

Reviewers

The NRF will have a pool of reviewers across disciplines and they will be registered in the web portal. Reviewers are expected to treat the proposals in strict confidentiality. Three independent blind reviews for each proposal is to be conducted. Later the proposals and their reviews are examined by the board to make a decision and later put up the case before the Executive Committee.

The reviewers may judge the quality of the proposals based on the following:

- Original ideas of the project.
- Its wider applicability to policy, industry or society.
- The reviewers are also expected to look into the budget as well as the research infrastructure requirements to carry out the project. A detailed guideline will be made available to the reviewers.

Researchers/ Innovators

Researchers and innovators will submit the research proposals prepared by them based on the guidelines. The researcher may be anyone who has the competence to do research independently or on behalf of an institution/organisation, as NEP 2020 envisages public and private participation equally with academia and industry linkage. Interdisciplinary proposals, across two or more divisions, would be specially welcomed and encouraged.

Eligibility for receiving funding: Researchers/Innovators from all educational institutions, universities, colleges and schools/offices, both public and private, as well as from research institutions, will be eligible to receive funding from the NRF.

The NRF will allow research and innovations proposals as per the following:

- Research and innovations projects to be conducted by a single principal investigator;
- Collaborative grants for inter- and intra-institutional projects;
- Initial capacity building by a mentor researcher and mentee institution;
- Capacity building to push institutions that are already conducting research into a higher orbit;
- Well-envisioned consortia and conferences that is likely to move forward research in the country;
- Larger and longer duration projects of national importance or inspiration.

The submitted research proposals are expected to describe any societal impact anticipated and sought, e.g. the training of students and postdoctoral fellows, public outreach, cleaning of a river, elimination of a disease, increasing agricultural yields, taking strides towards gender equality, preservation of ancient manuscripts and artifacts, etc.

Funding

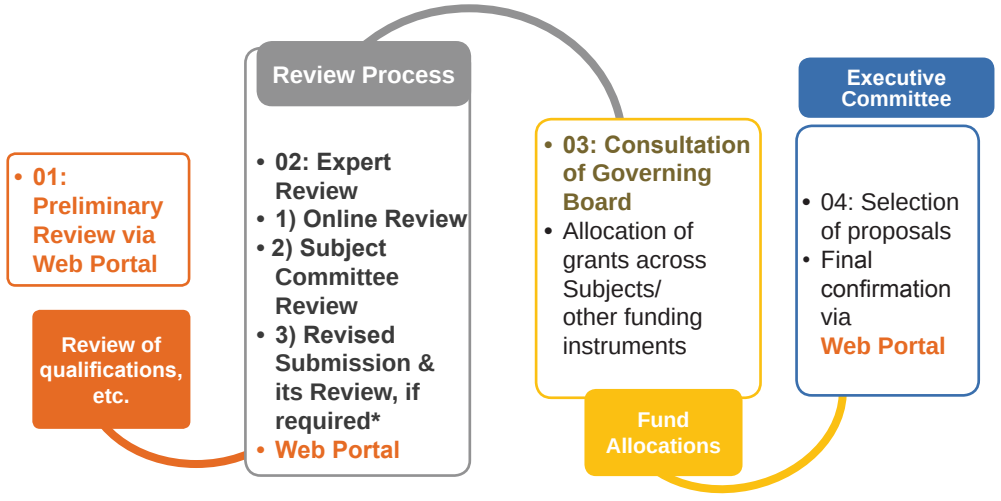
The NRF will get its funding from the Central Government. However, it will also make an effort to create a corpus fund in due course. The benefiting industry from the NRF funded research can be asked to contribute a certain share to the corpus. The corpus for the NRF will be managed professionally for steady risk-free return. The research proposals can also be collaborative with industry. In such circumstances, industry needs to contribute a matching share of research funding over and above the NRF funds.

The primary task of the NRF is to fund peer-reviewed research proposals across all disciplines. NRF will fund the research proposals twice every year on a rolling basis. The review process will be an ongoing process and plays a vital role in funding research and innovation of NRF.

Review System

All research proposals will be received through the dedicated web portal. Using the subject key words and codes within each subject area, the proposals will be shared with the Subject Directorates. Simultaneously, the reviewers of NRF will be connected to the research proposals appropriately via web portal. After the remarks of the reviewers, the same will be sent to the Review Boards of Subject Committees. The funding of the research proposals will be based upon the fund allocation across different funding instruments, subjects, gender, region, etc, as decided in the Governing Body in consultation with the Subject Directorates. In turn, Subject directorates will determine funding allocations among subjects within their respective divisions, again in consultation with Chairpersons of Divisions of Subjects (like Natural and Life Sciences as in Chart 2). Accordingly, based on availability and requirements as deemed appropriate by the review board and subject directorates, final selection of the proposals will be decided by the Executive Committee. Any unused funds can be retained in the Subject Directorates. The researchers will be intimated about their selection of research proposals via the web portal. The review system and its process are illustrated in Chart 3.

Chart 3: Review System in the Selection of Research Proposal(s)



Note: *If any research proposal submitted by a researcher or a organisation has been rejected on certain grounds, the individual researcher or the organisation may file objection within seven days after notification of selection. The rejected research proposal(s) are then reconsidered by the Review Committee and the suggestions for improvement and also a mentor is identified and notified by the NRF to those researchers. However, after mutual consent, the research funding and the research process begins in the next cycle.

The Executive Committee will make funding decisions based on detailed written reviews for each proposal and rationale for funding. Once the research proposals have been selected for funding, follow-up activities of mid-term or interim reviews will take place.

Interim Review

In the ongoing research projects, the researcher/investigator has to submit the Annual Performance Plan one or two months before the termination of research period in the pertinent year. This will be evaluated by an Annual Review Committee, to be constituted by the Research Management Division of corresponding Subject Directorates. The Annual Review Committee may discontinue or reduce research grants for the following year with regard to supported projects that produce inadequate research performance. In the process, it will review research contents (results of the previous year and research plan for the following year) and the appropriateness of research grant allocation for the following year.

Final (Phase) Review

The final phase of the review process will aim at the following:

- Deciding progress-management results and the scale of research grants.
- Notifying research institutions of progress-management results.
- Submission of the Final (Phase) Report for Review Purposes and the Self-Review Report.

Funded of the projects within each given subject will be overseen end-to-end, in terms of funding, advice, progress, and completion. After the final submission of the reports, the office of the convergence under each Subject Directorates will look into the outcomes of research activities. The wider application of it either to the industry and the society at large will also be further examined. As per the illustrative Chart 2, this aspect will be looked after by the division of convergence of the corresponding Subject Directorates.

13.3.4 *Funding Portfolio*

Funding portfolio of NRF will include funding instruments for research projects and research infrastructures, viz., investigators or innovators, themes (thrust areas), research units, forums, infrastructure and research infrastructure. Distinction will be made between funding for individual researchers and funding for institutions, according to the requirements and objectives of research. Individuals with best research proposals across disciplines will be nominated for research awards.

Funding of Research Projects

- Researchers and research institutions will submit proposals to fund research projects and their supporting structures / research infrastructure within the type of funding programmes.
- Research grant proposals will be decided on the basis of peer review and evaluation.
- Research projects will be reviewed in writing, by a review panel.
- All decisions on research grant proposals will be based on the decision by the Executive Committee and the respective Subject Committees.
- The NRF Executive Committee and the office under this structure will administer their view, evaluation and decision processes.

Funding Process

The funding process involves the following activities and the details therein.

S. No.	Activities	Details
1	Establishment of Programme Plan	• Establish a programme plan for the current year • Identify changes in strategies and improvements.
2	Announcement of Programmes	• Inform the description of types of projects to be funded on different instruments and the same to be posted in the websites of NRF and DoE.
3	Call for Proposals	• Begin accepting proposal submissions
4	Establishment of Selection Plan	• Establish a plan for each review phase, including information about the review methods, budget allocation, and selection quota

5	Completion of Reviews and Selection of Projects	• Review proposals (preliminary, expert, & comprehensive types) • Based on review outcomes, deliberate and deciding on proposal selection
6	Notification of Selection and Finalisation of Agreements	• Notify applicants whose proposals were selected • Finalise agreements and distribute research grants
7	Follow-up Management	• Manage the progress of research • Conduct reviews for each stage and final product • Analyse results, performance, etc.

Note: * Year-round. But the selection of research proposals for funding will take place twice in a year.
Source: Adapted from NRF of South Korea http://www.nrf.re.kr/eng/page/f8405a92-5e7d-41b69f6ab8f63b637caf

Funds Disbursal

Sanctioned funds will be released annually, and in a timely manner, to the research institutions, subject to receipt of annual detailed reports describing progress and spending. The unutilised research fund will remain with the researchers and or institutions. The research funding is term based, based on the duration of the projects not annual based. It does not have to adhere to the financial year end procedures.

There will be appropriate budget control and audit mechanism for the research funds across various funding instruments. The NRF will look into the allocation and utility of its funds across various instruments, subjects, institutions, gender, regions, etc, every year. This information will be available in their annual report and on the web portal. This analysis will facilitate NRF to have a course correction and look into the alignment of its objectives.

13.3.5 *Research Promotion Strategies*

The NRF will seed, grow, facilitate research in thrust areas of research in all the seven broad subject domains, viz., Sciences; Technology; Social Sciences; Arts and Humanities; Health; Agriculture; and Environmental Issues, that require immediate and long-term research that have national significance in the following perspectives:

(i) Fundamental Research; (ii) Applied Research; (iii) Innovation; (iv) Action Research; (v) Emergent Areas; (vi) Convergence (interdisciplinary, multidisciplinary and transdisciplinary); and (vii) Knowledge Proliferation for Social Good.

- Capacity building through large, long-term, or mega projects: Nationwide projects to clean rivers bring clean energy to villages, sustainable agriculture, livelihood skills, etc.
- Encourage proposals that help build research capacity at State Universities, via (a) Seeding research at State Universities through Research Mentors, (b) Growing existing research at State Universities, (c) NRF doctoral and postdoctoral fellowships, etc.

- NRF will run a special programme till 2040 to support State Universities to enhance their research capacities, thus enabling them to transition to Type 1 or 2 institutions.
- Establishing NRF chairs in cutting edge research areas in different thrust areas, besides establishing innovation and research centres/institutions.
- Disseminate research findings of the NRF funded research on relevant professional forums, and generate national awareness for the same. Also disseminate the information and details of completed and ongoing research to avoid duplication of research. This would also ensure that researchers take up new or original area to work on.
- Establish network across the nation for research and development across and between disciplines of knowledge, facilitate and extend such linkages, especially to State Universities and colleges.
- Liaison between researchers, and relevant branches of government, industry, different professional bodies such as DTC, ICMR, ICSSR, etc.
- Develop literature and provide avenues/opportunities to develop research development capabilities in all thrust areas.
- Create/develop podcasts/videos/brief documentaries of eminent scientists/social scientists to share their success stories to inspire the next generation.
- Initiate a series of lectures on potential themes from all the thrust areas both in face to face and web telecast.
- Initiate a special lecture series wherein international scholars can be invited to give a lecture on cutting edge areas of research.
- Encourage forums to organise inter-disciplinary seminars/workshops.
- Research and further study programmes will be jointly developed and supervised by reputed institutions abroad. Doctoral students in the programme will complete a six-month research stay at the respective partner institutions.
- Provide funding support for the two-way movement of talented research students and post-doctoral fellows, as part of funding joint research project as research collaboration.
- Periodically update research areas of national importance by the Governing Body.
- Create clusters of excellence in various higher education institutions in the form of incubation centre of innovative ideas.
- In accordance with international best practice, all intellectual property rights, including publications and patents, of NRF-funded research will be retained solely by those carrying out the research, while giving the government (including any of its assigned agencies) the license to use, practice, or implement the research/invention (or any of its output) for the public good without payment of any royalty or charge.

Recognising Outstanding Research

NRF will recognise particularly outstanding research progress in the nation, on proposals funded by the NRF as well as for other research being conducted around the country. This will be done through establishing awards, prizes, and national seminars on prize-winning and innovative work across and around disciplinary areas.

- Award for doctoral and post-doctoral research scholars across disciplines.
- Award for early career researchers in all thrust areas.
- Establish awards to honour research work in specific disciplines.
- Awards in the name of eminent Indian scientists and social scientists in their respective contribution to the subject, industry, society, etc.
- Breakthrough Award in all thrust areas.
- Institution of NRF-Industry award.
- Best book/ publication of the year award in all thrust areas.
- Best Partnership Award to acknowledge Government Department or Ministry/Industry/NGO/ International Collaboration.
- Ideas Competition at universities and colleges for innovative and indigenous ideas.
- Prizes for efforts and initiatives from technology transfer to knowledge transfer.

NATIONAL INSTITUTE OF EDUCATIONAL PLANNING AND ADMINISTRATION

(Deemed to be University)

17-B, Sri Aurobindo Marg, New Delhi - 110016 (INDIA)