STARRED LAQ NO. 001A

SUB: - NATIONAL EDUCATION POLICY

TABLED BY: -SHRI. ALTONE D'COSTA,SHRI.CARLOS FERREIRA,

SHRI.CRUZ SILVA, SHRI.VIJAI SARDESAI, SHRI.YURI ALEMAO,

MLA.

TO BE ANSWERED ON: 18/07/2023.

Sr. No.	Question	Answer
	Will the Minister of Education be pleased to state?	By Dr. Pramod Sawant,Hon'ble Chief Minister/EM.
a)	The present status of implementation of the National Education Policy (NEP) along with copies of memorandums received related to the implementation of NEP and the action taken report, if any, furnish all correspondences and file notings;	Sir, **School Education** - Foundational Stage 1 is implemented from the academic year 2023-24.The report of Task Force Committee is at **Annexure I** . The copy of memorandum received related to implementation of NEP is at **Annexure II**. For **Higher Education -** NEP 2020 is being implemented in a phased manner as per the directives of the Ministry of Education, UGC, NITI Aayog and recommendations of Chief Secretaries' Conference held at Dharamshala. The new NEP 2020 academic structure has been implemented starting from the first year (2023 onwards) at Under Graduate (UG) level at all non-technical colleges in Goa. The Best Practices that are adopted in Goa, and Action Taken Report of the NEP 2020 implementation is attached at **Annexure III.**
b)	The measures that have been taken to ensure that all stakeholders, including Schools and School management, parents,	State Level seminar on NEP- 2020 was conducted by SCERT on 23rd, 24th, and 25th, 30th and 31st of January 2023 in 5

	teachers and students are adequately prepared for the implementation of the NEP along with the related documents detailing these measures and whether the effectiveness of these measures can be or has been evaluated;	different Venues across the State. The Heads of High Schools and Higher Secondary Schools and the School Managing Committee members were invited to attend the Seminar. Detail discussion both from administrative and academic point of views was held and the questions and quarries raised by the participants were addressed to. In some of the in-service training programmes for teachers and heads of schools conducted by SCERT during the last two years, discussion on NEP - 2020 was included. The soft copy of the NEP-2020 document has been circulated to all the Schools asking schools Heads to inform the teachers and other stakeholders to read the document.
c)	Whether any committees/task forces have been constituted under Shri. LaxmikantParsekar/Subhash Shirodkar/Anil Samant or under any other individual to examine the NEP to design state-specific content frame work for NEP or for any other area related to the NEP with details of each of the Committee alongwith the names of the Committee members, copies of the reports, copies of the agenda, annexures and minutes of the meeting of each of the Committee/Task forces; and	**School Education** A Task Force Committee on School Education was formed under the Chairmanship of Shri. Subhash Shirodkar, Honourable Minister of WRD and Cooperation and Provedoria. The Committee was consisted of 20 members. The names of the other members of the Committee is as per **Annexure IV**. To prepare State Curriculum Framework for Foundational Stage a Committee has been constituted under the Chairpersonship of Shri. Anil Samant. The list of Members of the committee is as per **Annexure V**. **Higher Education** Under the Chairmanship of Shri LaxmikantParsekar a committee was constituted, under which sub-committees were constituted to prepare guidelines. List of Committee members is attached as **Annexure VI.** Sub-committee's reports are attached at **Annexure VII.**

d)	The details of all the topics dropped from the school syllabus since the year 2019 in the tabular format inclusive of topic name, subject name, brief of the topic, reason for dropping the topic and whether the opinion poll will be included in the syllabus?	Topic on Opinion Poll is already included in Supplementary Book of History of Class XII, prepared by Goa Board of Secondary and Higher Secondary Education, Alto – Betim , Goa. However, Chpater 5 – Part II of History Class XII namely "THROUGH THE EYES OF TRAVELLERS" has been deleted as it was of less importance compare to other content in the book.

CONFIDENTIAL

Government of Goa

NATIONAL EDUCATION POLICY (NEP) - 2020

State Task Force Committee Report

(School Education)

Submitted by

Shri. Subhash A. Shirodkar

Chairman – NEP 2020 Task Force Committee

&

Minister of Water Resource Development, Co-Operation & Provedoria, Govt. of Goa.

CONTENTS

A. Introduction:

The National Education Policy 2020 (NEP-2020) has been approved by Union Cabinet, Govt. of India on 29th July 2020. The NEP-2020 is the first education policy of the 21st century, which aims to address the many growing developmental imperatives of our country and is aligned to the 2030 agenda for sustainable development.

On announcement of the National Education Policy (NEP) 2020, the State Government constituted two separate committees for School Education and Higher Education. The scope of the committee is to examine NEP-2020 the policy and to suggest road map for the state of Goa at School Education for implementation of NEP-2020. The School Education Task Force Committee consists of 34 members under the Chairmanship of Shri. Subhash A. Shirodkar, M.L.A., Shiroda Constituency.

The members of State Task Force Committee NEP-2020 for School Education are as follows: (vide order no: D.E/Misc/NEP/2020-21/76 dated 26/09/2020)

1.	Shri Subhash A. Shirodkar Minister for Water Resource Development, Co-Operation & Provedoria, Govt. of Goa.	Chairman
2.	Shri. Ravi Dhavan, IAS Secretary (Education), Govt. of Goa.	Member
3.	Shri. Shailesh R. Sanai Zingde, Director, Directorate of Education, Porvorim - Goa.	Member
4.	Shri. Bhagirath Shetye, Chairman, Goa Board of Secondary and Higher Secondary Education, Alto Porvorim.	Member
5.	Ms. Deepali Naik, Director, Directorate of Women and Child Development, Govt. of Goa.	Member
6.	Shri. Bhaskar Nayak Ex-Director of Higher Education.	Member
7.	Shri. Shripad K. Patnekar Chairman GEDC, Porvoirm - Goa	Member
8.	Shri. Jose Rebelo Ex-Chairman GBSHSE	Member
9.	Dr. Nandakumar Kamat Retd. Professor, Goa University	Member

10.	Shri. Arun Sakardande Rt. Principal, Zantye College, Bicholim.	Member
11.	Dr. D. B. Arolkar Principal Dnayan Prasarak Mandal's College & Research Centre Assagao Mapusa.	Member
12.	Dr. Allan Abreau Rtd. Principal, GVM College of Education, Ponda	Member
13.	Dr. Sanjay Desai Principal, CES College of Arts & Commerce, Cuncolim.	Member
14.	Fr. Zeferino D'souza President, Diocesan Society of Education	Member
15.	Fr. Allan Noronha, SFX, ABE	Member
16.	Fr Pedro Rodriguez SJ, ABE	Member
17.	Shri. Subhash Desai, Secretary, All Goa Management Association	Member
18.	Shri Damodar Panchawadkar, President, Principal Forum	Member
19.	Dr. Sadanand Hinde Principal Bhumika Higher Secondary School, Sattari	Member
20.	Mr. Olimpia Gonsalves, Principal, AIM Higher Secondary School, Davorlim, Salcete, Muslim Minority Institution	Member
21.	Dr. Elvis Gonsalves, Principal, St Xavier Higher Secondary School, Mapusa	Member
22.	Shri. Mariano Valdaries President, Goa Headmaster's Association	Member
23.	Shri. Vilas Satarkar Headmaster, Dr. K. B. Hedgewar High School, Cujira Bambolim	Member
24.	Shri. Shirishkumar Amshekar, Headmaster, Swastik Vidyalaya, Priol	Member
25.	Smt. Savita Tawadkar, Headmistress, Balaram Residential School, Poinguinim.	Member
26.	Smt. Sunit S. Dessai Member, Bal Shikshan Parishad and	Member

	Headmistress S.V.V.M's K.G. & Pry. School, Bori	
27.	Smt. Poornima Rajendra Kerkar, Grade I Teacher, DM Higher Secondary, Mulgao	Member
28.	Smt. Lona D'silva Headmistress, St. Lawrence High School, Agassam.	Member
29.	Shri. Dattatraya Nayak President Secondary School Teachers Association	Member
30.	Shri. Anil Samant Ex-Principal. Saraswat Vidyalaya, Higher Secondary School	Member
31.	Shri. Oscar Gonsalves Administrator, Sharada Mandir, Miramar	Member
32.	Shri. Jervis Assumpteon Pereira Blue Economy Hub & Vice President of GTA.	Member
33.	Shri. Madhav Kharvi, Vice President, Goa Headmaster's Association	Member
34.	Shri Prakash Gaonkar Chairman, Govt. Primary Teachers Association	Member
35.	Shri. Vijay Shetti President, All Goa Govt. Recognized Unaided Schools Association	Member
36.	Shri. Nagraj Honnekeri Director, State Council of Educational Research & Training. Alto – Porvorim.	Member Secretary

B. Principles of the Policy: -

The National Education Policy 2020 is based on Five Fundamental Pillars i.e.

Access, Equity, Quality, Affordability and Accountability.

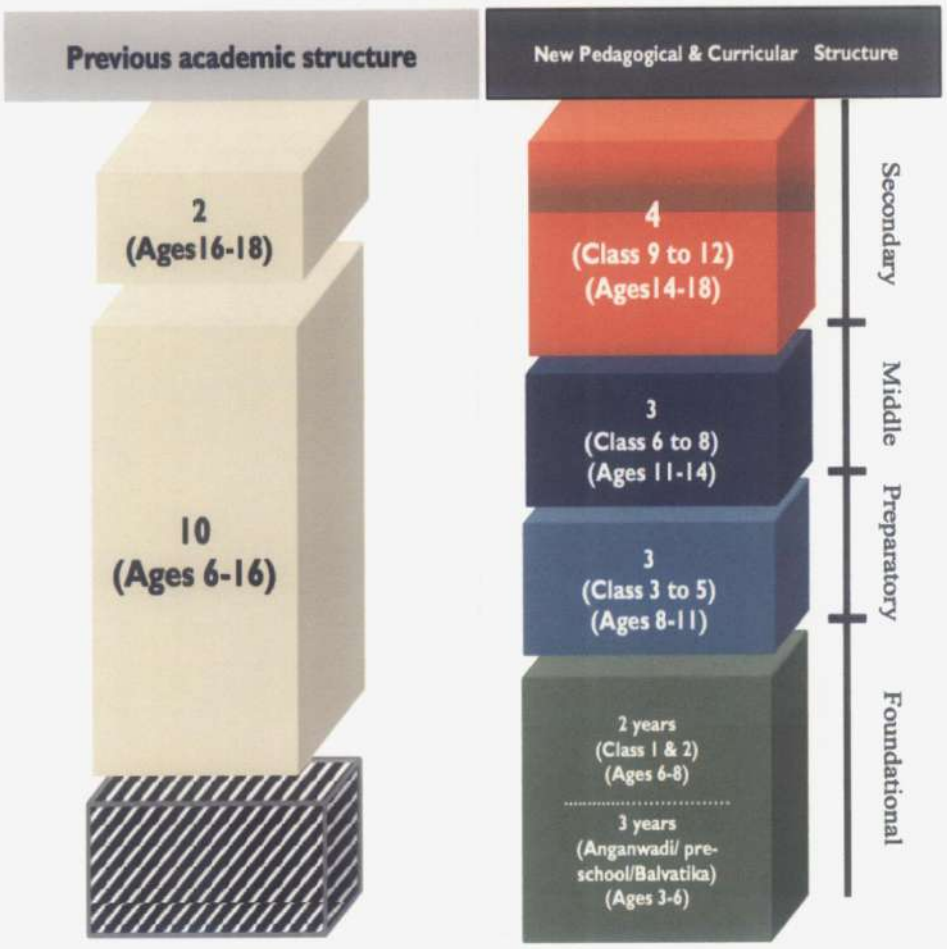
C. Vision: This National Education Policy aims at building a global best education system rooted in Indian ethos, and aligned with the principles enunciated above, thereby transforming India into a Global knowledge superpower.

D. Policy envisages on 8 verticals which are as follows:-

1. Early Childhood Care and Education: The Foundation of Learning
2. Foundational Literacy and Numeracy: An Urgent & Necessary Prerequisite to Learning
3. Curtailing Dropout Rates and Ensuring Universal Access to Education at All Levels
4. Curriculum and Pedagogy in Schools: Learning Should be Holistic, Integrated, Enjoyable, and Engaging
5. Teachers
6. Equitable and Inclusive Education: Learning for All
7. Efficient Resourcing and Effective Governance through School Complexes/Clusters
8. Standard-setting and Accreditation for School Education

E. Old and New Structure as per Prevailing and NEP 2020

This policy envisages that the existing 10 + 2 structure in school education will be modified with a new pedagogical and curricular **restructuring of 5 + 3 + 3 + 4 covering ages 3-18** as shown in the representative figure.



F. Fundamental Principles

The fundamental principles that will guide both the education system at large, as well as the individual institutions within it are:

- **recognizing, identifying,** and **fostering the unique capabilities of each student,** by sensitizing teachers as well as parents to promote each student's holistic development in both academic and non-academic spheres;
- **according the** highest priority **to achieving Foundational Literacy and Numeracy** by all students by Grade 3;

- **flexibility**, so that learners have the ability to choose their learning trajectories and programmes, and thereby choose their own paths in life according to their talents and interests;
- **no hard separations** between arts and sciences, between curricular and extra-curricular activities, between vocational and academic streams, etc. in order to eliminate harmful hierarchies among, and silos between different areas of learning;
- multidisciplinary and a **holistic education** across the sciences, social sciences, arts, humanities, and sports for a multidisciplinary world in order to ensure the unity and integrity of all knowledge;
- **emphasis on conceptual understanding** rather than rote learning and learning-for-exams;
- **creativity and critical thinking** to encourage logical decision-making and innovation;
- **ethics and human & Constitutional values** like empathy, respect for others, cleanliness, courtesy, democratic spirit, spirit of service, respect for public property, scientific temper, liberty, responsibility, pluralism, equality, and justice;
- **promoting multilingualism and the power of language** in teaching and learning;
- **life skills** such as communication, cooperation, teamwork, and resilience;
- **focus on regular formative assessment for learning** rather than the summative assessment that encourages today's 'coaching culture';
- **extensive use of technology** in teaching and learning, removing language barriers, increasing access for *Divyang* students, and educational planning and management;
- **respect for diversity** and **respect for the local context** in all curriculum, pedagogy, and policy, always keeping in mind that education is a concurrent subject;
- **full equity and inclusion** as the cornerstone of all educational decisions to ensure that all students are able to thrive in the education system;
- **synergy in curriculum across all levels of education** from early childhood care and education to school education to higher education;
- **teachers and faculty as the heart of the learning process** – their recruitment, continuous professional development, positive working environments and service conditions;
- a **'light but tight' regulatory framework** to ensure **integrity, transparency**, and **resource efficiency** of the educational system through audit and public disclosure while

encouraging innovation and out-of-the-box ideas through **autonomy, good governance, and empowerment**;

- **outstanding research** as a corequisite for outstanding education and development;
- continuous review of progress based on sustained research and regular assessment by educational experts;
- **a rootedness and pride in India**, and its rich, diverse, ancient and modern culture and knowledge systems and traditions;
- **education is a public service;** access to quality education must be considered a basic right of every child;
- **substantial investment in a strong, vibrant public education system** as well as the encouragement and facilitation of true philanthropic private and community participation.

Soon after the Task Force Committee is formed, met at State level on following dates: (i) 09.09.2020, (ii) 16.10.2020, (iii) 17.12.2020 (iv) 18/06/2021 (v) 22.06.2022

In the second meeting the committee decided to have 5 subgroups to work separately on 8 verticals. Accordingly, subgroups had their internal meetings offline as well as online.

G. Subgroups

GROUP – I

(FOUNDATION STAGE (3+2))

SCOPE:

Point No.(i)	• **Early Childhood Care and Education: The Foundation of Learning. Age 3 to 8 years.** Integrating Anganwadis into Foundation stage school. Modalities – challenges – Training – regulations – etc. Present unaided preprimary schools, Notification regarding entry age etc.
Point No. (ii)	• **Foundational Literacy and Numeracy: An Urgent & Necessary Prerequisite to Learning.** Present status in the state – Teachers vacancy – involvement of NGO – Digital libraries – Educated volunteers.

LIST OF MEMBERS:-

S.N	Name of the Members
1.	Shri. Bhaskar Nayak, Ex-Director of Higher Education.- (Coordinator)
2.	Shri. Shripad K. Patnekar, Chairman GEDC, Porvoirm – Goa (Member)
3.	Mr. Shirishkumar Amshekar, Headmaster, Swastik Vidyalaya, Priol (Member)
4.	Mrs. Milan/Sunit Dessai, Secretary, Bal Shikshan Parishad and Headmistress, Swami Vivekanand K.G. & Primary School, Borim. (Member)
5.	Mrs. Savita Tawadkar, Headmistress, Balaram residential School, Poinguinim (Member)
6.	Ms. Lona Dasilva, Headmistress, St. Lawrence High School. Agassaim. (Member)
7.	Mr. Anil Samant, Ex-Principal. Saraswat Vidyalayas, Higher Secondary School (Member)
8.	Fr Pedro Rodriguez SJ, ABE (Member)

GROUP NO. II

(PREPARATORY STAGE AND MIDDLE STAGE (3+3))

SCOPE:

Point No. iii	• **Curtailing Dropout Rates and Ensuring Universal Access to Education at All Levels** Present status in the state – target to be achieved – specific road map – role of NIOS – tracking of students from primary to higher secondary level.

LIST OF MEMBERS

S.N	Name of the Members
1.	Shri. Jose Rebelo, Ex-Chairman GBSHSE.....Coordinator
2.	Mr. Arun Sakardande , Rt. Principal, Zantye College, Bicholim.....Member
3.	Rev. Fr. Zeferino D'Souza, President, Diocesan Society of Education....Member
4.	Mr. Subhash Desai, Secretary, All Goa Management Association.....Member
5.	Mr. Mariano Vaddaries, President, Goa Headmaster's Association.....Member
6.	Mr. Oscar Gonsalves, Administrator, Sharada Mandir, Miramar.....Member
7.	Shri Jervis Assumpteon Pereira, Blue Economy Hub & Vice President of GTA..... Member

GROUP NO. III

(SECONDARY STAGE (+ 4)

SCOPE:

Point No. IV	• **Curriculum and Pedagogy in Schools: Learning Should be Holistic, Integrated, Inclusive, Enjoyable, and Engaging** Restructuring school curriculum and pedagogy in new design 5 + 3 + 3 + 4 Age group – with respect to 14 to 18 years: Secondary stage i.e 9^{th} , 10^{th} , 11^{th} & 12^{th} Holistic development of learners – multilingualism and power of language – curriculum integration om essential subjects and skills – textbooks – transforming assessment for student development – support for gifted / talented students.

LIST OF MEMBERS

Sr.No	Name of the Members
1.	Shri. Bhagirath Shetye, Chairman, Goa Board of Secondary and Higher Secondary Education, Alto Porvorim. (Coordinator)
2.	Dr. Nandakumar Kamat, Retd. Professor, Goa University. (Member)
3.	Dr. D. B. Arolkar, Principal Dnayan Prasarak Mandal"s College & Research Centre Assagao Mapusa (Member)
4.	Dr. Sadanand Hinde, Principal Bhumika Higher Secondary School, Sattari (Member)
5.	Dr. Elvis Gonsalves, Principal, St Xavier Higher Secondary School, Mapusa (Member)
6.	Shri Damodar Panchawadkar, President, Principal Forum. (Member)
7.	Shri Vilas Satarkar, Headmster, Dr. K.B. Hedgewar High School Cujira Bamblim (Member)
8.	Mr. Olimpia Gonsalves, Principal, AIM Higher Secondary School, Davorlim, Salcete, Muslim Minority Institution. (Member)
9.	Mr. Madhav Kharvi, Vice President, Goa Headmaster's Associatio. (Member)
10	Mrs Poornima Rajendra Kekar, Grade 1 Teacher, DM Higher Secondary, Mulgao - (Member)

GROUP NO. IV

(TEACHERS AND EFFICIENT RESOURCING AND EFFECTIVE GOVERNANCE THROUGH SCHOOL COMPLEXES/CLUSTERS)

SCOPE:

Point No. V	• **Teachers** Qualification – recruitment & employment – service environment and culture – Continuous Professional Development (CPD) - career management and progression – professional standards for teachers – special educators – approach to teacher education.
Point N. VII	• **Efficient Resourcing and Effective Governance through School Complexes/Clusters** Present school complexes system and the challenges ahead – amalgamation of schools having low enrolment and its implications

LIST OF MEMBERS

Sr. No	Name
1.	Dr Allan Abreau, Rtd. Principal, GVM College of Education, Ponda. (Coordinator)
2.	Shri. Shripad K. Patnekar, Chairman GEDC, Porvoirm – Goa (Member)
3.	Dr. Sanjay Desai , Principal, CES College of Arts & Commerce, Cuncolim (Member)
4.	Mr. Vilas Satarkar , Headmaster, Dr. Hedgewar High School, Cujira Bambolim (Member)
5.	Mrs. Savita Tawadkar, Headmistress, Balaram residential School, Poinguinim. (Member)
6.	Ms. Lona Dasilva, Headmistress, St. Lawrence High School. Agassaim. (Member)
7.	Mr. Dattatraya Nayak, President Govt. Aided High School Teachers Association (Member)
8	Mrs Poornima Rajendra Kekar, Grade 1 Teacher, DM Higher Secondary, Mulgao (Member)

GROUP NO. V (Revised on 05.11.2020)

(EQUITABLE AND INCLUSIVE EDUCATION: LEARNING FOR ALL AND STANDARD-SETTING AND ACCREDITATION FOR SCHOOL EDUCATION)

SCOPE:

Point No. VI	**Equitable and Inclusive Education: Learning for All** Present status – challenges – a way ahead
Pt. No. VIII	**Standard-setting and Accreditation for School Education** Role of DoE – regulation of school – establishment of a cell or independent institution "State School Standard Authority" (SSSA) – role and responsibility of SCERT, BRCs and CRCs – stopping commercialization of education – health check up – Mid Day Meal (MDM).

LIST OF MEMBERS

Sr. No	Name
1.	Fr. Allen Noronha, SFX, ABE (Coordinator)
2.	Dr. Nandakumar Kamat, Retd. Professor, Goa University (Member)
3.	Dr. D. B. Arolkar, Principal Dnayan Prasarak Mandal"s College & Research Centre Assagao Mapusa (Member)
4.	Mr. Olimpia Gonsalves, Principal, AIM Higher Secondary School, Davorlim, Salcete, Muslim Minority Institution (Member)

1. Early Childhood Care and Education: The Foundation of Learning (FOUNDATION STAGE (3+2 years))

The NEP identifies that over 85 percent of a child's brain develops by the age of 6 and emphasizes on providing critical importance to appropriate care and stimulation of the brain in a child's early years for healthy brain development and growth. It states that it is, therefore of the utmost importance that every child has access to quality early childhood care and education (ECCE).

The overall aim of Early childhood care and education (ECCE) will be to attain optimal outcomes in the domains of physical and motor development, cognitive development, socio-emotional-ethical development, cultural/artistic development, and the development of communication and early language, literacy, and numeracy.

Vision of NEP 2020 for ECCE

1. "ECCE ideally consists of flexible, multi-faceted, multi-level, play-based, activity-based, and inquiry-based learning, comprising of alphabets, languages, numbers, counting, colours, shapes, indoor and outdoor play, puzzles and logical thinking, problem-solving, drawing, painting and other visual art, craft, drama and puppetry, music and movement. It also includes a focus on developing social capacities, sensitivity, good behaviour, courtesy, ethics, personal and public cleanliness, teamwork, and cooperation. The overall aim of ECCE will be to attain optimal outcomes in the domains of: physical and motor development, cognitive development, socio-emotional-ethical development, cultural/artistic development, and the development of communication and early language, literacy, and numeracy." [NEP 2020, 1.2]
2. "The ability to read and write, and perform basic operations with numbers, is a necessary foundation and an indispensable prerequisite for all future schooling and lifelong learning. However, various governmental as well as non-governmental surveys indicate that we are currently in a learning crisis: a large proportion of students currently in elementary school - estimated to be over 5 crores in number - have not attained foundational literacy and numeracy, i.e., the ability to read and comprehend basic text and the ability to carry out basic addition and subtraction with Indian numerals." [NEP 2020, 2.1]

3. Fundamental principles of the education system include "according the highest priority to achieving Foundational Literacy and Numeracy by all students by Grade 3;" [NEP 2020, Principles of this Policy, p. 5]
4. "Recognizing, identifying, and fostering the unique capabilities of each student, by sensitizing teachers as well as parents to promote each student's holistic development in both academic and non-academic spheres;" [NEP 2020, Principles of this Policy, p. 5]
5. "Creativity and critical thinking to encourage logical decision-making and innovation;" [NEP 2020, Principles of this Policy, p. 5]
6. "Ethics and human & Constitutional values like empathy, respect for others, cleanliness, courtesy, democratic spirit, spirit of service, respect for public property, scientific temper, liberty, responsibility, pluralism, equality, and justice". [NEP 2020, Principles of this Policy, p. 5]

Anchors to NEP 2020

The following quotes have been taken from relevant chapters of the NEP 2020 and Draft NEP 2019 prepared by the Kasturirangan committee (DNEP 2019). Please read Sections 1 and 2 of NEP 2020, and Chapters 1 and 2 of DNEP 2019 in detail. Please also go through Paragraphs 3.3 to 3.7 of the NEP 2020, as well as P3.1 and P3.5 to 3.9 of DNEP 2019.

1. "The overall aim of ECCE will be to attain optimal outcomes in the domains of physical and motor development, cognitive development, socio-emotional-ethical development, cultural/artistic development, and the development of communication and early language, literacy, and numeracy." [NEP 2020, 1.2]
2. "A National Curricular and Pedagogical Framework for Early Childhood Care and Education (NCPFECCE) for children up to the age of 8 will be developed by NCERT in two parts, namely, a sub-framework for 0–3-year-olds, and a sub-framework for 3–8-year-olds, aligned with the above guidelines." [NEP 2020, 1.3]
3. "The overarching goal will be to ensure universal access to high-quality ECCE across the country in a phased manner. Special attention and priority will be given to districts and locations that are particularly socio-economically disadvantaged." [NEP 2020, 1.4]

4. "For universal access to ECCE, Anganwadi Centers will be strengthened with high-quality infrastructure, play equipment, and well-trained Anganwadi workers/teachers" [NEP 2020, 1.5]
5. "It is envisaged that prior to the age of 5 every child will move to a "Preparatory Class" or "Balavatika" (that is, before Class 1), which has an ECCE-qualified teacher." [NEP 2020, 1.6]
6. "ECCE will also be introduced in Ashramshalas in tribal-dominated areas and in all formats of alternative schooling in a phased manner." [NEP 2020, 1.8]
7. "The responsibility for ECCE curriculum and pedagogy will lie with MHRD. The planning and implementation of early childhood care and education curriculum will be carried out jointly by the Ministries of HRD, Women and Child Development (WCD), Health and Family Welfare (HFW), and Tribal Affairs." [NEP 2020, 1.9]
8. "The ability to read and write, and perform basic operations with numbers, is a necessary foundation and an indispensable prerequisite for all future schooling and lifelong learning." [NEP 2020, 2.1]
9. "Attaining foundational literacy and numeracy for all children will thus become an urgent national mission, with immediate measures to be taken on many fronts and with clear goals that will be attained in the short term (including that every student will attain foundational literacy and numeracy by Grade 3)." [NEP 2020, 2.2]
10. "On the curricular side, there will be an increased focus on foundational literacy and numeracy - and generally, on reading, writing, speaking, counting, arithmetic, and mathematical thinking - throughout the preparatory and middle school curriculum, with a robust system of continuous formative/adaptive assessment to track and thereby individualize and ensure each student's learning." [NEP 2020, 2.4]
11. "The numerous rich traditions of India over millennia in ECCE, involving art, stories, poetry, songs, gatherings of relatives, and more, that exist throughout India must also be incorporated in the curricular and pedagogical framework of ECCE to impart a sense of local relevance, enjoyment, excitement, culture, and sense of identity and community. The traditional roles of families in raising, nurturing, and educating children also must be strongly supported and integrated." [DNEP 2019, Chapter 1, p. 48]
12. "Due to the scale of the current learning crisis, all viable methods will be explored to support teachers in the mission of attaining universal foundational literacy and

numeracy...it will also be made far easier for trained volunteers - from both the local community and beyond - to participate in this large-scale mission." [NEP 2020, 2.7]

13. "Enjoyable and inspirational books for students at all levels will be developed, including through high-quality translation (technology assisted as needed) in all local and Indian languages, and will be made available extensively in both school and local public libraries." [NEP 2020, 2.8]
14. "A national repository of high-quality resources on foundational literacy and numeracy will be made available on the Digital Infrastructure for Knowledge Sharing (DIKSHA). Technological interventions to serve as aids to teachers and to help bridge any language barriers that may exist between teachers and students, will be piloted and implemented" [NEP 2020, 2.6]
15. "Currently, with the lack of universal access to ECCE, a large proportion of children already fall behind within the first few weeks of Grade 1." [NEP 2020, 2.5]
16. "The Foundational Stage will consist of five years of flexible, multilevel, play/activity-based learning and the curriculum and pedagogy of ECCE as mentioned in para 1.2. The Preparatory Stage will comprise three years of education building on the play, discovery, and activity-based pedagogical and curricular style of the Foundational Stage, and will also begin to incorporate some light textbooks as well as aspects of more formal but interactive classroom learning, in order to lay a solid groundwork across subjects, including reading, writing, speaking, physical education, art, languages, science, and mathematics." [NEP 2020, 4.2]
17. "As research clearly shows that children pick up languages extremely quickly between the ages of 2 and 8 and that multilingualism has great cognitive benefits to young students, children will be exposed to different languages early on (but with a particular emphasis on the mother tongue), starting from the Foundational Stage onwards." [NEP 2020, 4.12]
18. "It is recognized that mathematics and mathematical thinking will be very important for India's future and India's leadership role in the numerous upcoming fields and professions that will involve artificial intelligence, machine learning, and data science, etc. Thus, mathematics and computational thinking will be given increased emphasis throughout the school years, starting with the foundational stage, through a variety of innovative methods, including the regular use of puzzles and games that make mathematical thinking more enjoyable and engaging." [NEP 2020, 4.25]

19. "All curriculum and pedagogy, from the foundational stage onwards, will be redesigned to be strongly rooted in the Indian and local context and ethos in terms of culture, traditions, heritage, customs, language, philosophy, geography, ancient and contemporary knowledge, societal and scientific needs, indigenous and traditional ways of learning etc. – in order to ensure that education is maximally relatable, relevant, interesting, and effective for our students. Stories, arts, games, sports, examples, problems, etc. will be chosen as much as possible to be rooted in the Indian and local geographic context. Ideas, abstractions, and creativity will indeed best flourish when learning is thus rooted." [NEP 2020, 4.29]
20. "The critical problems and recommendations regarding ECCE, foundational literacy and numeracy, access, enrolment and attendance discussed in Chapters 1–3, are particularly relevant and important for underrepresented and disadvantaged groups. Therefore, the measures from Chapters 1– 3 will be targeted in a concerted way for SEDGs." [NEP 2020, 6.3]
21. "Schools providing quality ECCE reap the greatest dividends for children who come from families that are economically disadvantaged." [NEP 2020, 6.5]
22. "Ensuring the inclusion and equal participation of children with disabilities in ECCE and the schooling system will also be accorded the highest priority." [NEP 2020, 6.10]
23. "Beyond the teaching of cutting-edge pedagogy, teacher education will include grounding in sociology, history, science, psychology, early childhood care and education, foundational literacy and numeracy, ..." [NEP 2020, 15.5]

II. Pre- School Education (ECCE) and Foundation Literacy & Numeracy

The purpose of Foundation Literacy and Numeracy mission is to ensure that every child in the country necessarily attains foundational literacy and numeracy by the end of Grade-III, and not later than Grade-V, by 2025.Our world is changing and in order to prepare our children for this new world we need to change the way we educate them. In 21st century educators must create a curriculum that will help students connect with the world and understand the issues that our world faces, that our country faces and that our society faces. The curriculum which schools need to follow will have to bring change in the teachers and students to connect with those around them and their community. Teachers in this new environment will become less instructors and more orchestrators of information, giving children the ability to turn knowledge into wisdom. Teachers have to build the curiosity in the students at all the levels, which will them to become lifelong learners. And one more very important aspect is teachers have to be very flexible with how they teach and give learners the resources to continue learning outside the school and to have lifelong learning.

Early Childhood Care Education: The term Early Childhood Care Education (also known as pre-primary or pre-school education) traditionally refers to the education of children aged three to six years. The current condition of education for this age group lies at two extremes. In urban areas, pre-schools cover certain topics (such as letters from the alphabet and numbers up-to 100) from the curricula of Grades 1 and 2. On the other hand, in rural areas, education in the Anganwadis does not go beyond storytelling and teaching some songs and poems. In fact, we are unclear about what should be taught to this age group, and how it should be taught. This lack of clarity reflects in our pre-schools. The NEP 2020 envisages a five-year foundational stage of education: Three years of Early Childhood Care Education and the first two years of primary school. In other words, Early Childhood Care Education is now supposed to extend from ages three to eight. An important point to note here is that the changes proposed in NEP 2020 are necessarily curricular in nature and not at the level of the physical facilities for ECCE. The existing infrastructure of Anganwadis, pre-primary sections attached to schools, and independent pre-school centers are expected to be strengthened for ECCE and this can be done only if the Government works out a clear roadmap. It also suggests that there should be continuity between the ECCE curriculum and Grade 1 and 2 curricula. The implementation part is very necessary so that from the beginning the Child gets enough and right education which will help him to build his career and nation in better way.

Present Scenario in the State:

Presently all Pre-Primary schools in the State are running by following different curriculum in different languages namely English, Marathi, Konkani, Urdu. Anganwadis which are under the control of Department of Women and Child Development are working separately and some of the Anganwadis which are running in the premises of either in running or closed Govt. Primary Schools. Anagnwadis are following the curriculum which is developed by W.C.D. with help of educational experts. Some of the Pre-Primary Schools are housed in rented premises at various floors (first/second/third) without having proper infrastructure, work place etc.

Taluka Wise Data: Anganwadi Centers and Registered Pre-Primary School

Sr. No.	Taluka	No. of Anganwadi Centers	Registered Pre-Primary School
1	Bardez	145	122
2	Bicholim	108	39
3	Pernem	74	50
4	Ponda	167	57
5	Sattari	108	17
6	Tiswadi	108	76
7	Dharbandora	42	2
8	Quepem	84	23
9	Salcete	177	108
10	Mormugao	114	62
11	Sanguem	52	17
12	Canacona	83	15
Total		**1262**	**588**

Recommendations for ECCE and FLN.

a) In NEP-2020 there is a major structural change in School Education having 5+3+3+4 structure as against the existing 10+2 structure.

Therefore, it is proposed to implement NEP-2020 in a phased manner immediately to begin with first year of Pre-Primary School / Nursery.

Sr. No	Stage	Duration (in years)	In Classes to be implemented
1	Foundation stage: (i) Nursery (Pre-Primary Stage-1) (ii) Lowe KG (Pre-Primary Stage-2) (iii) Upper KG (Pre-Primary Stage-3) (iv) Primary Class 1 (v) Primary Class 2	5	Nursery (3+ years) onwards

b) A notification / official communication to be issued by the Government for the implementation of NEP-2020 in a phased manner for the benefit of all stake holders and general public.

c) Government may setup a separate Directorate of Early Childcare Education (ECCE) or separate section of ECCE / Foundation level learning in the Directorate of Education headed by Dy. Director of Education.

d) In NEP-2020 the pre-primary school is included in the domain of School Education. Therefore, the date of joining the Nursery class for a child as on 1st June to be notified. The policy categorically envisages the entry age of Pre-Primary Education (preparatory) is 3+ years. *Necessary changes to be carried out along with other changes in Education Act 1984 and Education Rules 1986.*

e) All registered and unregistered Pre-Primary Schools working in the State separately or attached with Primary School, who desires to continue should apply to Directorate of Education for recognition of Pre-Primary school by fulfilling the required conditions.

f) The Directorate of Education and the Directorate of Women and Child Development, both departments have to work in coordination and consonance with regard to pre-primary education at Anganwadi and Pre-Primary / Preparatory schools as per NEP-2020 and all Anganwadis have to be co-located in nearby Government Primary Schools within the

cluster designated. In this regard a Government notification is required to be issued for better coordination.

g) To adapt NCERT Curriculum based on NCF (Foundation Level Learning) - 2022 for Pre-Primary schools with inclusion of local components and activities related to day today examples.

The curriculum which schools need to follow will have to bring change in the teachers and students to connect with those around them and their community. Teachers in this new environment will become less instructors but more of facilitator to develop skills at formative age, giving children the ability to turn knowledge into wisdom.

Resources like books, toys, musical instruments to be made available at Anganwadis or preschools for the children where they can learn in play way method.

h) Goa Samagra Shiksha should work out all possible interventions to get maximum central funds in their Annual Work Plan & Budget (AWP&B) every year with respect to Govt. Pre-Primary school / Anganwadi and Primary Schools.

i) SCERT should initiate short & long duration training for Anganwadi workers and Pre-Primary school teachers with the help of experts from the State, Organizations, D.El.Ed and B.Ed Colleges and NCERT, New Delhi. These training programme to be conducted at Block / Taluka level.

j) Anganwadi workers/teachers with qualifications of 10+2 and above shall be given a 6-month certificate programme in ECCE; and those with lower educational qualifications shall be given a one-year diploma programme covering early literacy, numeracy, and other relevant aspects of ECCE.

k) Govt. may look into the possibility of separate pre entry Diploma programme of minimum one-year duration for new entrants in ECCE whose qualification shall be Std. XII and above for which Recruitment Rules need to be amended.

l) Inclusive education to be encouraged and to be closely monitored through different activities and observations by the facilitators / teachers.

m) Medium of Instruction at ECCE shall be Konkani / Marathi / Reginal Language as applicable / Bilingual with Reginal Language and English

n) In order to meet the requirement of pre-primary stage as per the NEP 2020 in Government and Government Aided Schools, Directorate of Education may like to make a special provision of the budget under the school education for the year 2022-2023

III. Curtailing Dropout Rates and Ensuring Universal Access to Education at All levels (PREPARATORY STAGE AND MIDDLE STAGE (3+3 years))

As per the NEP, one of the primary goals of the schooling system must be to ensure that children are enrolled in school and are attending regularly.

As per UDISE+ data, the GER for classes I to VIII in the state of Goa is 91.10 with GER of girls being 92.98 and boys being 89.42 for the year 2021-2022.

Administrative Restructuring of various stages of the school education

The structure recommended by the NEP 2020 is as follows

Ages 3-6 (3yrs)	Anganwadi and Pre-Primary	FOUNDATIONAL STAGE
Ages 6-8 (2 yrs)	Classes 1 and 2	
Ages 8-11 (3 yrs)	Classes 3 to 5	PREPARATORYSTAGE
Ages 11-14 (3 yrs)	Classes 6 to 8	MIDDLE
Ages 14- 18 (3 yrs)	Clase 9 to 12	SECONDARY

The present scenario in Goa is as follows

Classes 1 to 4	Primary	Working separately as independent unit
Classes 5 to 8	Middle	Working along with Secondary section with full fledge Headmaster
Classes 9 and 10	High	
Classes 11 and 12	Higher Secondary	Working separately with in-charge or full fledge Principal

Vocational Education at Preparatory stage

In India, the traditional skills were transferred from the parent to the child. Since the children are now attending school there is a likelihood that most of these skills could be lost. The Schools specially in the rural areas could go a long way in promoting these skills amongst its students. This could be done by inviting local experts in traditional skills to the school on bagless days and use the experts to demonstrate the skills and help the children to acquire those skills. This will require the help of the local community. Agricultural activities could also be included during the bagless days. Urban schools could also use these days to expose the children to activities in rural areas. This will go a long way in making learning joyful and also develop a love for nature among the students.

Recommendations

1) The restructuring should be done at school level as per the NEP 2020 in a phased manner starting with Foundation Stage followed with Preparatory stage, Middle stage and Secondary stage. Accordingly, Directorate of Education should also make separate sections in their Directorate as per the stages proposed by NEP 2020 and each section should be headed by Dy. Director of Education and Asst. Director of Education.

2) Schools that are, at present functioning only as Primary Schools will have to be converted as:

   (1) Schools for Foundational or

   (2) Schools for Foundational and Preparatory (Nursery class to class V) or

   (3) Schools for Preparatory only (class 3 to class 5).

3) The restructuring should be done in a phased manner so as to maintain continuity in the process. There is a need for mapping to make optimum use of all resources. Government Grants may be explored to develop the necessary infrastructure. Human resource at Government Aided schools attached to Aided Middle and Secondary school. However, for Government schools Directorate of Education should provide infrastructure and other necessary equipment and human resource through the State funds and ongoing central schemes like Goa Samagra Shiksha.

4) Restructuring of the school may be initiated either by relocating, upgrading or collocating in the school complexes created for the ease of functionalities under NEP 2020 for all stages.

5) **Restructuring School Curriculum and Pedagogy**

   As mentioned in para 4.2 of the NEP "The Preparatory Stage will comprise three years of education building on the play, discovery, and activity-based pedagogical and curricular style of the Foundational Stage, and will also begin to incorporate some light text books as well as aspects of more formal but interactive classroom learning, in order to lay a solid groundwork across subjects, including reading, writing, speaking, physical education, art, languages. science, and mathematics."

   A) Preparatory Stage:

   i. To encourage multilingualism, both the Devanagree and Roman scripts should be introduced from class 3 itself. Teachers need to be trained to use Devanagree phonetics even in the teaching of English.

   ii. In Mathematics, the international numeral set and notations should be used.

iii. In Sciences, as far as possible both local and English terms should be used.

iv. As this is an age of IT and AI, children need to be exposed to these tools right from classes 3 or 4. In this connection, the Government could explore possibilities of giving every child a tablet as part of the educational kit along with connectivity (directed through firewalls) so that the child is able to use the tablet at least in the school even if there are connectivity issues at his/her place of residence.

v. Experiential learning should be adopted, including hands-on learning, arts-integrated and sports-integrated education, story-telling-based pedagogy, among others.

B) Middle Stage:

This stage signifies the beginning of adolescence and also the introduction of concepts in various subjects

As per the NEP 2020 "The Middle Stage will comprise three years of education, building on the pedagogical and curricular style of the Preparatory Stage, but with the introduction of subject teachers for learning and discussion of the more abstract concepts in each subject that students will be ready for at this stage across the sciences, mathematics, arts, social sciences, and humanities. Experiential learning within each subject, and explorations of relations among different subjects, will be encouraged and emphasized despite the introduction of more specialized subjects and subject teachers."

Therefore the committee recommends the following:

i. Experiential learning should be adopted, including hands-on learning, arts-integrated and sports-integrated education, story-telling-based pedagogy, among others, as standard pedagogy within each subject, and with explorations of relations among different subjects. Every school should be encouraged to develop (1) workshop for hands-on teaching learning (2) a garden (3) kitchen in addition to a Library, a playground and a multipurpose hall

ii. Children should be exposed to vocational activities from class 6. This will create proper attitudes in the minds of the students and develop vocational

skills which will help them later in life. As suggested, the workshop, laboratory, kitchen and garden could go a long way towards realizing this.

iii. Two to four days in a month or 10 days in a year should be declared as "bagless days" where children could be exposed to life skills and also local art and culture.

IV. Curriculum and Pedagogy in Schools: Learning Should be Holistic, Integrated, Inclusive, Enjoyable, and Engaging (SECONDARY STAGE (+ 4))

The curricular and pedagogical structure of school education will be reconfigured to make it responsive and relevant to the developmental needs and interests of learners at different stages of their development, corresponding to the age ranges of 3-8, 8-11, 11-14, and 14-18 years, respectively. The curricular and pedagogical structure and the curricular framework for school education will the ref ore be guided by a 5+3+3+4 design, consisting of the Foundational Stage (in two parts, that is, 3 years of Anganwadi/pre-school + 2 years in primary school in Grades 1-2; both together covering ages 3-8), Preparatory Stage (Grades 3-5, covering ages 8- 11), Middle Stage (Grades 6-8, covering ages 11-14), and Secondary Stage (Grades 9-12 in two phases, i.e., 9 and 10 in the first and 11 and 12 in the second, covering ages 14-18). " [NEP 2020, 4.1]

Anchors to NEP 2020

The following quotes have been taken from relevant chapters of the NEP 2020 and Draft NEP 2019 prepared by the Kasturirangan committee (DNEP 2019). Please read Section 4 of NEP 2020 and Chapter 4 of DNEP 2019 in detail.

1) Stages: "The curricular and pedagogical structure of school education will be reconfigured to make it responsive and relevant to the developmental needs and interests of learners at different stages of their development, corresponding to the age ranges of 3-8, 8-11, 11 -14, and 14-18 years, respectively. The curricular and pedagogical structure and the curricular framework for school education will therefore be guided by a 5+3+3+4 design." [NEP 2020, 4.1]
2) Holistic Development of Learners: "Specific sets of skills and values across domains will be identified for integration and incorporation at each stage of learning, from pre-school to higher education." [NEP 2020, 4.4].
3) Reduce curriculum content: "Curriculum content will be reduced in each subject to its core essentials, to make space for critical thinking and more holistic, inquiry-based, discovery -based, discussion-based, and analysis based learning. The mandated content will focus on key concepts, ideas, applications, and problem solving." [NEP 2020, 4.5]
4) Fundamental principles of the education system include "recognizing, identifying, and fostering the unique capabilities of each student, by sensitizing teachers as

well as parents to promote each student's holistic development in both academic and non-academic spheres;" [NEP 2020, Principles of this Policy, p. 5]

5) "emphasis on conceptual understanding rather than rote learning and learning-for xams".[NEP 2020, Principles of this Policy, p. 5]
6) Pedagogic Reforms: "Teaching and learning will be conducted in a more interactive manner; questions will be encouraged, and classroom sessions will regularly contain more fun, creative, collaborative, and exploratory activities for students for deeper and more experiential learning." [NEP 2020, 4.5
7) Experiential learning: "In all stages, experiential learning will be adopted, including hands-on learning, arts-integrated and sports-integrated education, story-telling-based pedagogy, among others, as standard pedagogy within each subject, and with explorations of relations among different subjects." [NEP 2020, 4.6]
8) Competency-based learning: "To close the gap in achievement of learning outcomes, classroom transactions will shift, towards competency-based learning and education." [NEP 2020, 4.6]
9) Assessments: "The assessment tools (including assessment "as", "of", and "for" learning) will also be aligned with the learning outcomes, capabilities, and dispositions as specified for each subject of a given class." [NEP 2020, 4.6]
10) Flexibility and Choice: "Students will be given increased flexibility and choice of subjects to study, particularly in secondary school - including subjects in physical education, the arts and crafts, and vocational skills – so that they can design their own paths of study and life plans." [NEP 2020, 4.9]
11) Horizontal Integration: "No hard separations between arts and sciences, between curricular and co-/extra-curricular activities, between vocational and academic streams, etc. in order to eliminate harmful hierarchies among, and silos between, different areas of learning;" "Subjects such as physical education, the arts, and vocational crafts will be seriously incorporated throughout the school curriculum, with a consideration for what is interesting and safe at each age." [NEP 2020, Principles of this Policy, p. 5][DNEP 2019, P4.4.2]
12) "Incorporation of Indian knowledge systems into the curriculum: Indian contributions to knowledge - and the historical contexts that led to them - will be incorporated in an accurate and engaging manner, wherever relevant, into the existing school curriculum and textbooks." [DNEP 2019, P4.6.9.1]

13) Rootedness: "All curriculum and pedagogy, from the foundational stage onwards, will be redesigned to be strongly rooted in the Indian and local context and ethos in terms of culture, traditions, heritage, customs, language, philosophy, geography, ancient and contemporary knowledge, societal and scientific needs, indigenous and traditional ways of learning etc. order to ensure that education is maximally relatable, relevant, interesting, and effective for our students. Stories, arts, games, sports, examples, problems, etc. will be chosen as much as possible to be rooted in the Indian and local geographic context. Ideas, abstractions, and creativity will indeed best flourish when learning is thus rooted. " [NEP 2020, 4.29]

Present scenario in the Curriculum and Pedagogy

- Presently the State is following NCERT curriculum for class 1st to 12th which is due for revival / update.
- Specially in urban areas due to more class strength difficult to use constructivist method of teaching.
- There is a gap in the present curriculum for vocational education and carrier guidance.
- A key element of students centric learning is the student and that learning takes place (the knowledge gained) as a result of being personally involved in this pedagogical approach.

Reforming Assessment Practices

- The Goa Board of Secondary and Hr. Secondary Education has introduced semester system of Board examination wherein first semester examination based on MCQs and final examination based on subjective and objective evaluation.
- It is necessary to enhance the quality of assessment by following scientific principles of assessments, setting of good question and analysis.
- The introduction of competency-based items in the Board examinations would support students of classes X and XII to acquire deep understanding of the concepts which would focus more on understanding the concept rather to memorize steps and answers.
- High quality questions (valid, reliable and understanding based) will support in generating insights and feedback for schools/parents and students on the basis of students' data.

Recommendations:

1) **The curriculum to be updated to recent development:** The state needs to adapt the National Curriculum Frame work developed by NCERT. Accordingly further course of action to be taken for preparing syllabus, adopting textbooks etc. by SCERT – Goa for class 1 to 8 and by Goa Board of Secondary and Higher Secondary Education for class 9 to 12.
2) For effective implementation of NEP 2020 and to practice the pedagogical practices such as constructivist method of teaching as envisaged in the policy there is a need to regulate the student teacher ratio in the classroom as prescribed by Ministry of Education, GoI.
3) Students should be guided by the institution at all stages of their studies to choose their right vocation and work toward it. Career information should be a part of curriculum at all stages of school education. The proper guidance should be given to the students to discover their aptitude and interest to choose an appropriate vocation. A counsellor who is well versed with testing techniques should be appointed at school cluster levels and the required material for testing should be made as a part of school curriculum.
4) **Development of skills at secondary stage:** NSQF subjects presently implemented in the state of Goa needs to be revised. Subjects like wall painting, driving, swimming etc to be included as per the need of the locality.
5) Evaluation should not be exams oriented but it should be student centred with 360 degree orientation.
6) All schools should have independent library, laboratory, computer room with requisite number of computers.
7) Need to introduce student centric pedagogy for effective learning:
    - Orientation programs for the students.
    - Students are to be engaged intellectually, emotionally, socially and physically so that the learning task is authentic.
    - Students should be allowed to learn at their own pace.
8) The four-stage school curriculum is one of the most significant transitions in NEP 2020. Each stage distinct in its curriculum and pedagogy approach.
    - Every stage is designed well with respect to the age of the students; hence every stage is distinct. As the rote learning will be reduced the students will be learning

more through greater experiential, play-based, inquiry-based and discovery-based learning, creativity, enjoyment, interaction, discussion, problem solving, analytic thinking etc there'll be naturally a very smooth transition from one stage to the other with no-stress or-mental pressure.

- Teachers carrier advancement should also be linked with students performance. The teachers who are going extra mile for all round development of the child should be incentivise.
- Teachers' professional development through in-service program needs to be focussed specially on behaviour of learner at each stage of development.
- While framing the curriculum and pedagogy student-friendly/centred, the difficulty level is to be maintained. Otherwise, it so happens that in the race of achieving 100% result, the students are more judged on their knowledge, and not on their understanding, application and decision making skills.
- Re-orientation of Teachers to shift from teacher centric methods to student centric methods.
- Role of Teacher as facilitators rather than instructors. Teachers are required to be trained in this type of pedagogy by providing hands on training on using different methods and materials as a part of teaching - learning process.
- Teachers will have to collaborate with their colleagues from different disciplines for implementing this pedagogy.
- A daily planning and preparation to be an integral part of teaching learning process which has to be monitored by Head of the institution regularly.
- The teachers have to prepare materials, rubrics and assessment tools and ensure that the new pedagogy is implemented effectively.
- The School Managements including the Heads of the Schools have to be made aware of the relevance of student centric pedagogy so that they help in creating conducive environment for its implementation in the true spirit.
- The parents have to be made aware of the benefits of the student centric pedagogy. A shift is required in the thought process of the parents as well. The PTAs to play a very important role in effective implementation of this pedagogy.
- The existing infrastructure needs to be re-engineered to suite the new pedagogy.
- Flexible learning spaces are required to be created (flexible seating arrangement).

- Audio-visual and other laboratories and smart classrooms have to be set up as per the requirements in the schools / at the clusters.
- Adequate teachers, teaching resources and other relevant material / resources have to be provided at the school / cluster level.
- All the schools have to provide to the students all the core subjects and a set of skill-based subjects like art, music, physical education and others from a set of vocational subjects.
- The vocational subjects and laboratory for it to be provided cluster based to get more choice for the students.
- The skill based and vocational subjects may be locality / area specific and to be taught by the local experts who will also grade the students. Educational qualifications should not be insisted for such experts who are imparting tradition-based subjects.
- Students can also be enrolled in the nearby ITIs for vocational subjects.
- As far as possible, the cluster should be within a radius of 5kms from the vicinity of the schools attached to a particular cluster.
- Transport facility should be provided to the students to travel to the various schools of the cluster or an ITI for learning the various skill based/vocational subjects of their choice.
- Teachers have to be made aware and trained about the flexible choice based system as they have to implement it.
- Given the workload of a flexible choice based system for teachers and students, it is almost impossible to manage the whole data and assessment methods manually. All schools will, therefore to be connected through Unified Student Information System **(SIS)** and Learning Management System **(LMS) or** through Vidhya Samiksha Kendra (VSK).
- The Directorate of Education / Goa Board / SCERT / GEDC / DIET / Competent Agency should design the SIS and LMS and provide the same to all the schools. This will also help the monitoring agency to monitor and track the progress of the students and the progress of implementation of NEP20 in all the schools.
- The Government should provide additional, one time funds for creating necessary infrastructure to all the schools and clusters for implementing flexible choice based system.

- Additional recurring funds should also be provided to all the schools and clusters till the flexible choice based system is stabilized.

9) Holistic development is emphasized in NEP 2020. The specific set of skills, capacities and values that would be cross cutting across different circular areas. The progression of development of the skills, capacities and values across the school stages.

- Well defined guideline needs to be prepared emphasizing various programs or activities at each school stage. So that school teachers are aware about what are the minimum programs or activities they need to complete to accomplish required skills, capacities and values.
- The Foundational Stage will consist of five years (3 years to 8 years i.e Foundation stage 1 – Nursery, Foundation stage 2 – KG1, Foundation stage 3 – KG2, Foundation stage 4 – Class 1 and Foundation stage 5 – class 2) of flexible, multilevel, play / activity based learning and the curriculum and pedagogy of ECCE as mentioned in para 1.2 of NEP 2020.
- The Preparatory Stage will comprise three years of education (8 years to 11 years i.e Preparatory Stage 1 – class 3, Preparatory Stage 2 – class 4, Preparatory Stage 3 – class 5) building on the play, discovery, and activity-based pedagogical and curricular style of the Foundational Stage, and will also begin to incorporate some light text books as well as aspects of more formal but interactive classroom learning, in order to lay a solid groundwork across subjects, including reading, writing, speaking, physical education, art, languages, science, and mathematics.
- The Middle Stage will comprise three years of education (11 years to 14 years i.e Middle Stage 1 - class 6, Middle Stage 2 – class 7 and Middle Stage 3 - class 8), building on the pedagogical and curricular style of the Preparatory Stage, but with the introduction of subject teachers for learning and discussion of the more abstract concepts in each subject that students will be ready for at this stage across the sciences, mathematics, arts, social sciences, and humanities. Experiential learning within each subject, and explorations of relations among different subjects, will be encouraged and emphasized despite the introduction of more specialized subjects and subject teachers.
- The Secondary Stage will comprise of four years of multidisciplinary study (14 years to 18 years i.e Secondary Stage 1 – class 9, Secondary Stage 2 – class 10,

Secondary Stage 3 – class 11, Secondary Stage 4 – class 12), building on the subject-oriented pedagogical and curricular style of the Middle Stage, but with greater depth, greater critical thinking, greater attention to life aspirations, and greater flexibility and student choice of subjects. In particular students would continue to have the option of exiting after Grade 10 and re-entering in the next phase to pursue vocational or any other courses available in Grades 11- 12, including at a more specialized school, if so desired.

- The above-described stages are purely curricular and pedagogical, designed to optimize learning for students based on the cognitive development of children: they will inform the development of National and State curricula and teaching-learning strategies at each stage, but parallel changes to physical infrastructure will not be required.
- NEP 2020 aims to recognize the need to evaluate "higher order skills" such as Creativity, critical thinking, problem solving, visualisation, and idea generation. NEP 2020 emphasises on multidisciplinary learning and no separations are made between vocational and academic streams.

10) **Competency based Education and Assessment Reforms**

"In all stages, experiential learning will be adopted, including hands-on learning, arts-integrated and sports-integrated education, story-telling-based pedagogy, among others as standard others, as pedagogy within each subject, and with explorations of relations among different subjects. To close the gap in achievement of learning outcomes, classroom transactions will shift, towards competency-based learning and education. The assessment tools (including assessment "as", "of', and 'for" learning) will also be aligned with the learning outcomes, capabilities, and dispositions as specified for each subject of a given class. " -NEP 2020(Para 4.6).

11) **Curriculum to be Redesigned**

The curriculum needs to be redesigned as Learning Outcomes & Competencies to develop their common understanding to inform practitioners based on National Curriculum Framework. This work has to be initiated through state institute like SCERT and Goa Board of Secondary and Higher Secondary Education.

12) **Reforming assessment practices**

Board is transitioning towards Competency based assessment practices by introducing Competency Based Questions in Class X and Class XII exams. This needs to be evaluated with respect to effectiveness of students performance and quality of question paper.

13) **Capacity building for Teachers**

- The Capacity Building Programmes for Teachers to be introduced under the umbrella of SCERT / DIET / DE / GBSHSE / Competent Agency with the focus on Assessment, Item writing and understanding data to promote understanding and appreciation of competency-based education.
- Better capacities of teachers for using competency-based assessments to improve classroom instruction, diagnose misconceptions, and apply principles of the Science of learning to classroom practices.
- The capacity building workshops will cover identified applicable innovative practices and curriculum intervention.
- This would improve modalities of assessment, continuous professional development of teachers, and development of learning communities engaged in improving assessment practices.

14) **Development of Teacher Resources**

It is recommended to take initiatives to develop resources that are curriculum aligned for essential concepts, lesson plans and question banks that would support teachers to implement an active student centric pedagogy at school level.

15) **Redefining Leaming Frameworks**

a. The learning standards would also help teachers to prioritize some of the essential concepts in the topic to be taught.
b. Shared understanding of the competencies to be acquired and assessed.
c. Enhancement of the quality of assessment (both formative and summative)
d. Guidelines for paper setting blueprint for teachers.
e. Availability of high-quality sample competency-based assessments for teachers.
f. Facilitation of enduring learning which can be useful throughout students' lifetime.

16) Reducing the content load in all subject without compromising on educational vision and goals is required and it is to be initiated by the competent authority.

17) Curriculum which is either designed or adapted from NCERT to ensure coherence continuity, efficacy and Indian knowledge system, heritage within the school curriculum across the curricular areas and school stages are also to be integrated part of it.

18) **Cluster School Complexes :-**

- It is recommended all schools from pre-primary to higher secondary schools are to be grouped into cluster of school complexes. In one complex required number of pre-primary schools, primary schools, upper primary schools, secondary schools and higher secondary schools should be available.
- In-case based on the statistical data available students are not getting facilities for smooth transition from one stage to another stage, Directorate of Education has to take necessary steps to upgrade the existing schools to the next level as per the demanding situation either Government or Aided Schools.
- It is very essential to note that while fine tuning the formation of the clusters, the complete study of particular taluka should be made and in the planning process grassroot level officers are to be involved for the same.
- As far as possible the lead school of the cluster should be Government school. In case Government is not available Directorate of Education has to nominate an Aided School as Nodal school.
- All the necessary changes in the structure modalities of cluster etc. are to be incorporated in the education rules as well as act which remains common for Government and Government Aided schools.
- A sample of formation of cluster of all Talukas is given below for getting the clarity while preparing final cluster formation exercise in the State by Directorate of Education.
- A sample of formation of cluster of Tiswadi Taluka with respect to Anganwadi / Pre-primary to Hr. Secondary School is annexed herewith at Annexure-I.

Proposed Cluster of Schools

National Education Policy - 2020															
Proposed Cluster of Schools															
Taluka: Quepem															
Cluster	School Name	Primary	VIII Strength	IX Strength	X Strength	Total	XI Arts Strength	XI Com. Strength	XI Sci. Strength	XI Voc. Strength	XII Arts Strength	XII Com. Strength	XII Sci. Strength	XII Voc. Strength	Total
1	The New Educational Institute ,Curchorem	295	165	174	191	825									
	Sarvodaya Educational Society's High School ,Curchorem	332	154	155	136	777									
	Our Lady of Perpetual Succor High School, Curchorem	476	2	22	10	510									
	Chandranath Educational Scociety's High School, Assolda Chandor		23	18	17	58									
	Government High School, Xeldem Quepem		22	24	21	67									
	Smt. Chandrabhaga Tukoba Naik HS/HSS, Curchorem	116	39	62	33	250	128	126	91	93	122	113	119	69	861
	Guardian Angel HS/HSS, Curchorem	412	158	162	198	930	102	89	46	109	97	95	47	79	664
					606		230	215	137	202					

2	Holy Cross Institute, Quepem		104	104	**81**	289									
	Immaculate Conception High School, Paroda Quepem	129	39	42	**41**	251									
	Our Lady Mother of the Poor High School, Tilamol Quepem	276	53	67	**63**	459									
	Government High School, Malkarne Quepem		17	24	**24**	65									
	Government High School, Ambaulim Quepem		31	33	**37**	101									
	Don Bosco Farm High School, Sulcorna Quepem		42	42	**38**	122									
	Pope John XXIII HS/HSS, Quepem	480	146	137	**118**	881	**54**	**52**	**25**		56	61	46		294
	Shree Chadreshwar Bhoothnath Higher Secondary School, Ambaulim Quepem						**27**	19			22	16			84
					402		**81**	**71**	**25**	**0**					
3	Dayanand Bandodkar High School, Cuncolim		24	38	**34**	96									
	Government High School, Balli Cuncolim Quepem		50	31	**41**	122									
	Government High School,Fatorpa Quepem		9	13	**15**	37									

	Government High School,Maina Quepem		12	24	20	56									
	Government High School,Paddi Bareem Quepem		25	41	26	92									
	Government High School,Morpirla Fatorpa Quepem		29	32	40	101									
	Vivekanand Higher Secondary School, Balli Cuncolim Quepem						66	24			48	18			156
					176		66	24	0	0					
	Total- Clusters:3 Higher Secondary: 5														

Taluka: Salcete

Cluster	School Name	Primary	VIII Strength	IX Strength	X Strength	Total	XI Arts Strength	XI Com. Strength	XI Sci. Strength	XI Voc. Strength	XII Arts Strength	XII Com. Strength	XII Sci. Strength	XII Voc. Strength	Total
1	Adarsh V.V. High School, Pajifond Margao	64	93	83	71	311									
Area: Margao, Fatorda, Borda	Fatima Convent High School, Margao	439	149	157	150	895									
	Holy Spirit Institute, Margao		123	180	133	436									
	Mahila and Nutan English High School, Margao		142	153	143	438									
	Bhatikar Model High School, Gogal Margao	281	134	138	132	685									

	New Era High School, Malbhat Margao		21	25	26	72									
	Popular High School, Comba Margao	109	60	80	68	317									
	Tristao Braganza Cunha New High School, Aquem Margao		20	44	22	86									
	Ravindra Kelekar Dyanmandir, Vidyana gar Aquem Margao		51	44	48	143									
	St. Joseph High School, Aquem Alto Margao	401	103	122	86	712									
	Our Lady Of Rosary High School, Fatorda	351	123	141	103	718									
	St. Anthony's High School, Margao		47	42	26	115									
	Iqra English School, Sirvodem Margao		23	13	17	53									
	Al- Falah Education Society's Crescent School, Fatorda Margao		36	35	20	91									
	Ramacrishna Madeva Salgaoncar Higher Secondary School, Comba Margao							251		78		180		62	571
	Government Multipurpose Higher Secondary School , Borda Margao						150	130	49	59	111	108	70	47	724
	Jawaharlal Nehru Higher Secondary						25	23	8	47	23	25	15	43	209

	School, Chandrawado Margao														
	Shree Damodar Vidyalaya English HS/ Shree Damodar HSS, Margao	111	82	85	**91**	369			**260**				261		521
	Presentation Convent HS/ HSS, Ambaji Fatorda Margao	457	130	128	**111**	826	**87**		**93**		96		105		381
	Loyola HS/HSS, Margao	354	167	176	**164**	861	65		123		55		106		349
					1411		**327**	**404**	**533**	**184**	**285**	**313**	**557**	**152**	**2755**
2	Our Lady of Snow's High School, Raia	86	109	108	**79**	382									
Area: Nuvem, Verna, Utorda, Raia, Majorda, Colva, Loutulim	St. Thereza's Convent High School, Ganapoga, Raia	47	35	23	**37**	142									
	Holy Rosary Convent High School, Nuvem	99	63	63	**42**	267									
	Mae Dos Pobres High School, Nuvem	113	57	64	**54**	288									
	Our Lady of Lourdes High School, Utorda	69	24	52	**17**	162									
	St. Anthony's High School, Majorda	124	82	85	**60**	351									
	St. Joseph's Convent, Nagoa Verna	73	53	46	**38**	210									
	Our Lady of Succour High School, Nagoa Verna	158	67	68	**59**	352									
	Fr. Agnel Multipurpose High School, Verna	137	124	130	**145**	536									

	Saviour of the World High School, Loutolim		56	65	65	186									
	Mahalasa Narayani		20			20									
	Marina English High School, Verna		78	90	61	229									
	Don Bosco Higher Secondary School (Unaided), Loutolim									20				15	35
	Gauncar Higher Secondary School of Arts, Commerce and Vocational, Raia						26	40		87	17	39		83	292
	Carmel Higher Secondary School, Nuvem						131	65	134	90	108	55	71	62	716
	Fr. Basilio Andrade Memorial Higher Secondary School, Majorda						26	45		51	32	31		45	230
	Infant Jesus HS/HSS,Colva		101	118	90	309			48				74		122
					747		183	150	182	248	157	125	145	205	1395
3	St. Xavier's Institute High School, Curtorim	108	36	41	29	214									
Area: Davarlim, St.Jose de Areal, Curtorm,	St. Rita's High School, Maina Curtorim	173	100	118	115	506									
	Husna Sahara		32	30	25	87									
	St. Francis Xavier, Macasana	37	27	18	15	97									
	AIM English Medium HS/AIM	414	114	118	88	734	27	60	18		31	49	17		202

Chandor , Macazana	HSS , Rumdamol Davorlim														
	Our Lady of Carmel High School,Curtorim	112	85	72	**64**	333									
	St. Joseph's Educational Institute High School, Chandor	372	110	121	**118**	721									
	Bethany Convent High School, Sao Jose De Areal	373	109	98	**111**	691									
	Damodar English HS/HSS, Gudi Paroda	92	60	60	**43**	255	59	65	58	341	46	70	37	253	929
	St. Alex Higher Secondary School, Curtorim						32	43		93	22	26		83	299
					608		**118**	**168**	**58**	**341**	**99**	**145**	**94**	**336**	**1575**
4	Late Shre Vinayak Gopal Shenvi Vidyalaya, Rawanfond Navelim	155	60	95	94	404									
Area: Navelim, Benaulim, Chinchinim, Betalbatim	Perpetual Succour Convent High School, Navelim	632	192	189	**195**	1208									
	St. Mary of Angels Convent School, Chinchinim	269	87	78	**83**	517									
	St. Pius X High School, Orlim	126	92	81	**97**	396									
	Shishu Vikas High School, Aquem Baixo Navelim		39	48	38	125									

	St. Mary's High School, Varca	156	62	78	74	370									
	Assumpta Convent High School, Sarzora Chinchinim	202	58	52	47	359									
	St. Aloysius High School, Mazilvaddo Benaulim	186	47	57	47	337									
	Holy Cross Institute, Cavelossim	99	34	33	30	196									
	Auxilium High School, Benaulim	250	79	82	71	482									
	St. Jude's High School, Betalbatim	170	55	74	42	341									
	Sacred Heart of Jesus High School, Carmona		28	43	49	120									
	Holy Trinity Higher Secondary School, Mazilvaddo Benaulim						27	26		13	41	35		15	157
	Mount Mary's HS/HSS, Chinchinim	199	75	73	66	413	107	124	163	101	86	86	60	89	816
	Rosary HS/HSS, Navelim	601	213	227	176	1217	151	243	222	150	168	225	221	141	1521
					1109		**285**	**393**	**385**	**264**	**295**	**346**	**281**	**245**	**2494**
5	Infant Jesus High School, Cuncolim	94	28	22	21	165									
Area: Cuncolim, Assolna, Velim	Regina Martyrum High Schoo, Assolna	172	49	51	37	309									
	St. Rock's High School, Velim	66	20	19	18	123									
	St. Xavier's High School, Velim	152	40	44	37	273									

	Our Lady of Health High School, Cuncolim	304	65	90	**77**	536									
	St. Anthony's High School, Veroda Cuncolim	164	36	33	**25**	258									
	Cuncolim United HS/HSS, Cuncolim		74	78	**71**	223	109	108	86	91	117	77	91	96	775
	Maria Bambina Convent HS/Maria Bambina HSS, Cuncolim	391	103	96	**102**	692	52	27			32	22			133
					388		**161**	**135**	**86**	**91**	**149**	**99**	**91**	**96**	**908**
	Total- Clusters:5 Higher Secondary: 20														

Taluka: Ponda

Cluster	School Name	Primary	VIII Strength	IX Strength	X Strength	Total	XI Arts Strength	XI Com. Strength	XI Sci. Strength	XI Voc. Strength	XII Arts Strength	XII Com. Strength	XII Sci. Strength	XII Voc. Strength	Total
1	A.J. DE Almeida High School, Ponda	297	366	342	346	1351									
	Government High School, Sadar Ponda		55	49	31	135									
	Goa Vidyaprasarak Mandals Smt. Nelly Joildo Aguiar Higher Secondary School,Ponda						82	189	215	92	84	153	187	69	1071
					377		82	189	233	92	84	153	187	69	1071
2	Shiksha Sadan, Priol Mardol		35	31	37	103									

	Swastik Vidyalaya, Priol Mardol	83	25	18	17	143									
	VD and SV Wagle High School,Mangueshi Mardol	349	119	101	108	677									
	Shri Ravi Sitaram Naik Higher Secondary School, Farmagudi						50	50	80	56	62	60	138	69	565
					162		**50**	**50**	**80**	**56**	**62**	**60**	**138**	**69**	**565**
3	Smt. Anandibai M. Naik High School, Karanjal Madkai	104	33	28	25	190									
	Mahanandu G. Naik Memorial High School, Bhom Ponda		28	38	28										
	Government High School, Kundai Ponda		16	21	11										
	Shri Navadurga Vidyalaya /Shri Navadurga HSS, Marcaim Mardol		17	28	17	62	40	39			27	18			124
					81		**40**	**39**	**0**	**0**	**27**	**18**	**0**	**0**	**124**
4	Shree Mahalakshimi English School, Talaulim Ponda	131	31	32	34	228									
	Rajamata Padmavati Raje Soundhekar High School, Bandora Ponda	142	37	38	46	263									

	Sharada English High School, Durbhat Ponda	114	37	20	18	189									
	Sanjeevan Higher Secondary School, Nageshi Bandora									35				23	58
	Shri Saraswati HS/HSS, Kavlem Ponda	89	51	47	54	241	55	54			57	53			219
					152		**55**	**54**	**0**	**35**	**57**	**53**	**0**	**23**	**277**
5	Lokmanya Tilak Vidyalaya High School, Kavlem		38	64	48	150									
	S.S. Samiti's Smt. Indirabai V. Bhat Dhavalikar High School, Dhavali Ponda	196	85	110	110	501									
	S.S. Samiti's Higher Seconndary School, Kavlem Ponda	77				77			106				138		244
	Lokvishwas Pratishthan's Higher Secondary School, Dhavali Ponda									9				5	14
					158		**0**	**0**	**106**	**9**			**138**	**5**	**258**
6	School of Symbiosis, Shivshail Shiroda		90	68	76	234									
	Shrimati Kamlabai Hede High School, Shiroda	42	26	17	21	106									

	Shri Kamakshi High School, Shiroda Ponda	38	9	16	16	79									
	St. Joseph's High School, karai Shiroda Ponda	175	47	46	45	313									
	Shri Bramhadurga High School, Paz Shiroda		23	23	18	64									
	Navdeep Vidyalaya, Tarvalem Shiroda	29	8	13	15	65									
	Shivgram Educational Society Shiroda Higher Secondary School, Shiroda Ponda	300				300	14	16	43	57	36	20	46	89	321
					191		14	16	43	57	36	20	46	89	321
7	St. Anthony's High School, Amblai Panchwadi	88	29	23	23	163									
	New English H/s. Panchwadi	125	24	32	30	211									
	Dr. Sakharam Gude High School, Vazangal Shiroda Ponda	37	25	19	26	107									
	Kalyan Ashram Goa's Panchasheel English School, Panchawadi Ponda		17	22	16	55									
	Adarsh Vidya Prasarak Mandal's Higher Secondary School, Vazangal Shiroda						50	35			32	28			145

					95		**50**	**35**	**0**	**0**	**32**	**28**	**0**	**0**	**145**
8	Matoshri Indirabai Baburao Khandeparkar High School, Khandepar Ponda		196	185	176										
	Dr. K. B. Hedgewar Vidyalaya, Tisk Ponda	107	34	27	19	187									
	K.B. Hedgewar HSS						36	19			19	3			
	Krishna Raghunath Shetye Savoikar High School, Savoi Verem Ponda		33	45	43	121									
	Surashri Kesarbai Kerkar High School, Keri Ponda		39	33	28	100									
	Kamakshi Educational Society Higher Secondary School, Curti Ponda						**49**	**54**	**52**		48	33	46		282
					266		**85**	**73**	**52**	**0**	**67**	**36**	**46**	**0**	**282**
9	Government High School, Juna Bazar Ponda		29	30	**22**	81									
	Dada Vaidya High School, Curti Ponda		78	80	**65**	223									
	Ameya Vidya Prasarak Mandal's Higher Secondary School, Curti Ponda						**60**	**40**		**18**	59	58			235
					87		**60**	**40**	**0**	**18**	**59**	**58**	**0**	**0**	**235**

10	Pragati Vidyalaya, Borim Ponda		29	46	40	115									
	Vivekanand Vidyalaya HS/ Swami Vivekanand HSS, Borim Ponda	144	45	27	137	253		49	38	36		51	31	57	262
					77		**0**	**49**	**38**	**36**		**51**	**31**	**57**	**262**
11	Smt. Tarabai Dalvi High School, Pale Usgao	26	47	45	27	145									
	St. Joseph High School, Usgao	269	64	76	66	475									
	Government High School, Ganjem Usgaon		11	15	11	37									
	Government High School, Dhaushire Tisk Usgao Ponda		45	30	44	119									
	Sarvodaya Education Society HS/HSS, Usgao Ponda		22	25	14	61	100	60	120		85	54	96		515
					162		**100**	**60**	**120**	**0**	**85**	**54**	**96**	**0**	**515**
12	Government High School, Bethoda		49	51	37	137									
	Gananath English High School, Nirankal Ponda		23	22	21	66									
	Jamiya - E-Maqbuliya High School, Kasarwada Bethora Ponda	113	25	15	24	177									
	M.E.F.'s Higher Secondary School of Science, Nagamas|id	317				317			30				38		68
					82		**0**	**0**	**30**	**0**			**38**	**0**	**68**

13	Sharada English High School, Marcela	94	153	140	126	513									
	New English High School, Kundaim Ponda		19	30	22	71									
	International Sadguru Gurukulam Kundaim		31			31									
	Government High School, Savoi Verem Ponda		20	24	7	51									
	Krishna Raghunath Shetye Savoikar High School, Savoi Verem Ponda		33	45	43	121									
	Surashri Kesarbai Kerkar High School, Keri Ponda		39	33	28	100									
	Government Higher Secondary School, khandola Marcela						135	138	77	63	107	97	64	48	729
					226		135	138	77	73	107	97	64	48	729
	Total- Clusters:13 Higher Secondary: 18														

Taluka: Mormugao

Cluster	School Name	Primary	VIII Strength	IX Strength	X Strength	Total	XI Arts Strength	XI Com. Strength	XI Sci. Strength	XI Voc. Strength	XII Arts Strength	XII Com. Strength	XII Sci. Strength	XII Voc. Strength	Total
1															
	Government High School, Zuarinagar Vasco	282	44	51	35	412									

	Infant Jesus Academy, Velsao Cansaulim	142	29	26	**25**	222									
	St. Thomas High School, Cansaulim	323	82	65	**53**	523									
	Yallingeshwar HS		26	34	**42**	102									
	M.E.S. Higher Secondary , Zuarinagar						60	155	109	130	59	164	86	121	884
					258		**69**	**170**	**204**	**130**	**59**	**164**	**86**	**121**	**884**
2	Vidya Vihar High School. Thana Cortalim	306	65	48	**49**	468									
	Al- Madina High School, Cortalim	177	53	67	**34**	331									
	St. Ann's High School, Cortalim	158	28	30	**24**	240									
	St. Joseph Vaz High School, Sancoale		56	61	**32**	149									
	Shantadurga High School, Sancoale		12	15	**9**	36									
	Our Lady of Perpetual HS/ Our Lady of Perpetual Succour HSS. Cortalim	336	100	114	**72**	622	34	33			20				87
	Shri Shantadurga Higher Secondary School, Cortalim							**11**	**13**			13	17		54
					220		**34**	**44**	**13**	**0**	**20**	**13**	**17**	**0**	**141**
3	Keshav Smruti English HS/Keshav	128	171	191	126	616	60	45		42	52	41		37	277

	Smruti HSS, Alto Dabolim														
					126		**60**	**45**	**0**	**42**	**52**	**41**	**0**	**37**	**277**
4	Regina Mundi High School, Chicalim Vasco	405	100	103	**101**	709									
	Vidya Mandir High School, Chicalim		144	121	**131**	396									
	Mother of Mercy English High School, Merces Vaddem Vasco		104	114	**97**	315									
	Government High School, New Vadem Vasco	47	20	13	**7**	87									
	St. Joseph Institute, Vasco		68	67	**64**	199									
	St. Andrew's Institute /St. Andrew's HSS, Vasco	471	158	177	**169**	975	151	121	120	81	155	112	109	59	908
					569		**151**	**121**	**120**	**81**	**155**	**112**	**109**	**59**	**908**
5	Government High School, Vadem Vasco	35	30	34	**23**	122									
	Municipal High School, Vasco	157	43	72	**30**	302									
	St. Theresa's High School, Vasco	552	115	97	**104**	868									
	Government High School, Mangor Hill Vasco	65	58	38	**52**	213									
	Government High School, Vasco (Main)	33	24	21	**18**	96									

	Vadem Nagar English HS/Vadem Nagar HSS, Vademnagar Vasco						55	31	12		39	41	37		215
					227		**55**	**31**	**12**	**0**	**39**	**41**	**37**	**0**	**215**
6	Mata Secondary School, Baina Vasco	79	26	27	**28**	160									
	Our Lady of Desterro High School, Vasco	149	47	46	**31**	273									
	Our Lady of Candelaria High School, Baina Vasco	352	73	103	**69**	597									
	Anjuman Himayatul Islam High School, Baina Vasco	411	109	127	**111**	758									
	Ameeniya High School, Baina Vasco		10	16	9	35									
	Yalla Lingeshwar Baina		9	20	**11**	40									
	Government HS/HSS, Baina Vasco	34	38	38	**24**	134	**14**	**17**	**3**	**36**	**32**	**8**	**8**	**43**	**161**
					283		**14**	**17**	**3**	**36**	**32**	**8**	**8**	**43**	**161**
7	Shree Sushenashram High School, Mormugao	68	14	18	**24**	124									
	L.T Narendra A Mayekar Government High School, Sada Mormugao		12	12	**15**	39									
	Yuwak Sangh High School, Sada Mormugao		16	26	**16**	58									

	Murgaon High School, Sada		96	96	85	277									
	Deepvihar HS/HSS, Headland Sada		132	129	149	410		112	100			98	111		421
					289		**0**	**112**	**100**	**0**		**98**	**111**	**0**	**421**
	Total- Clusters:7 Higher Secondary: 10														

Taluka: Canacona

Cluster	School Name	Primary	VIII Strength	IX Strength	X Strength	Total	XI Arts Strength	XI Com. Strength	XI Sci. Strength	XI Voc. Strength	XII Arts Strength	XII Com. Strength	XII Sci. Strength	XII Voc. Strength	Total
1	Shree Damodar Vidyalaya, Loliem Canacona	35	4	40	30	109									
	St Sebastian's High School, Loliem Canacona	97	20	29	34	180									
	Shree Nirakar Vidyalaya, Mashem Loliem Canacona	40	36	24	26	126									
	Shree Shradhanand Vidyalaya, Paingin Canacona	64	41	53	53	211									
	St Anthony's High School, Galgibaga Canacona	106	53	45	36	240									
	SNES Tudal High School, Tudal Gaondongrem Canacona	72	45	42	39	198									
	Satyawati Soiru Angle Higher	0					62	71	63	0	64	50	60	0	370

	Secondary School, Mashem														
					218		**62**	**71**	**63**	**0**	**64**	**50**	**60**	**0**	**370**
2	Government High School, Gaondongrim Canacona	0	15	17	**28**	60									
	Shree Balaram Residential High School, Amone Painginim	67	70	64	**71**	272									
	Shree Balram Day Care School, Ardhfond Shristhal, Canacona	0	32	23	**37**	92									
	Shree Balram Higher Secondary School, Ardhfond						**55**	**22**	**0**	**0**	**53**	**26**	**0**	**0**	**156**
					136		**55**	**22**	**0**	**0**	**53**	**26**	**0**	**0**	**156**
3	Government High School, Shristhal Canacona	0	12	11	16	39									
	Governement High School, Sadolxem Canacona	0	32	21	35	88									
	Governement High School, Khotigao Canacona	0	22	28	**17**	67									
	Shree Katyayani Baneshwar Vidyalaya, Pansulem Canacona	130 (Un Aided)				130									

	Government Higher Secondary School, Mastimol						93	30	27	63	67	32	31	47	390
					68		**93**	**30**	**27**	**63**	**67**	**32**	**31**	**47**	**390**
4	St. Theresa of Jesus High School, Chaudi	219	66	78	69	432									
	St. Ann's Institute, Agonda	153	53	58	62	326									
	St. Theresa of Jesus Higher Secondary School, Chaudi						21	16	0	0	34	25	0	0	96
					131		**21**	**16**	**0**	**0**	**34**	**25**	**0**	**0**	**96**
5	Shree Mallikarjun Vidhyalaya, Charrasta Canacona	126	64	60	45	295									
	Government High School, Agonda	0	13	18	15	46									
	Government High School, Gavai-Khol Canacona	0	21	35	33	89									
	GES's Gurukul High School, Kajumol Khola Canacona	103	38	23	26	190									
	Shree Mallikarjun Higher Secondary School of Science, Charrasta						24	0	59	0		0	0	50	133
					119		**24**	**0**	**59**	**0**		**0**	**0**	**50**	**133**
	Total- Clusters:5 **Higher Secondary: 5**														

Taluka: Dharbandora

Cluster	School Name	Primary	VIII Strength	IX Strength	X Strength	Total	XI Arts Strength	XI Com. Strength	XI Sci. Strength	XI Voc. Strength	XII Arts Strength	XII Com. Strength	XII Sci. Strength	XII Voc. Strength	Total
Pilye	Vishweshwar Shankar Laad Higher Secondary School, Piliem Dharbandoda						63	40	38	35	50	35	39	20	320
	Gomantak Vidyalaya, Piliem Dharbandora		46	67	43	322									
	Matoshri Anandibai Vaman Marathe Vidyamandir, Tamsada Dharbandora		22	31	28	186									
	Government High School, Dayanandnagar Dharbandora		8	8	14	82									
					85		63	40	38	35	50	35	39	20	320
Sacorda	Madhavrao Talaulicar Higher Secondary School, Tiska Sacordem								15				18		33
	Smt. Hirabai Talaulikar, Sancordem		31	19	24	161	53								53
	Bharabhumi High School, Tambdi surla		25	20	16	146									
	Sacordem Education Society's High School, Navem Sacorda		16	10	21	97									
					61		53	0	15	0			18		86

Molle	SDES Shri Atal Bhari Vajpaye Higher Secondary School, Mollem						43	45				19			107
	Abhinav Vidyamandir, Mollem		22	23	29	191									
	Our lady of Piety High School, Collem		86	68	58	212									
	Government High School, Shigao Collem Dharbandora		7	10	10	49									
					97		43	45	0	0		19			107
Kirlapal	DES Immaculate Conception High School, Colsoi Dhabal		42	29	16	87									
	Somnath English High School, Savargal Kirlapal Dharbandora		48	71	51	170									
					67										
	Total- Clusters:4 Higher Secondary: 4														
Taluka: Sanguem															
Cluster	**School Name**	**Primary**	**VIII Strength**	**IX Strength**	**X Strength**	**Total**	**XI Arts Strength**	**XI Com. Strength**	**XI Sci. Strength**	**XI Voc. Strength**	**XII Arts Strength**	**XII Com. Strength**	**XII Sci. Strength**	**XII Voc. Strength**	**Total**
1 Netravali	Government High School, Netravali Sanguem		45	39	35	270									

	Government High School, Vadem Curdi Sanguem		36	37	**43**	227										
					78											
2 Sange	Miracles High School, Sanguem	249	69	55	**57**	349										
	Union High School, Sanguem		87	118	**105**	632										
	Government High School, Valkini Bhati Sanguem		26	22	**19**	108										
	Government Higher Secondary School, Sanguem						107	30	29	39	81	32	26	24	368	
					181		**107**	**30**	**29**	**39**						
3 Savordem	Government High School, Kalay Sanguem		38	28	**26**	198										
	Shree Sharada English High School, Sanvordem		20	24	**21**	147										
					47											
4.Rivon	Government High School, Colamb Rivona Sanguem		31	32	**17**	176										
	Our Lady of Fatima High School, Rivona	104	25	32	**24**	172										
	Utkarsh High School, Rivona		31	26	**18**	163										
	Government High School, Zambaulim		14	20	**17**	117										

					76										
	Total- Clusters:4 Higher Secondary: 1														
Taluka: Tiswadi															
Cluster	**School Name**	**Primary**	**VIII Strength**	**IX Strength**	**X Strength**	**Total**	**XI Arts Strength**	**XI Com. Strength**	**XI Sci. Strength**	**XI Voc. Strength**	**XII Arts Strength**	**XII Com. Strength**	**XII Sci. Strength**	**XII Voc. Strength**	**Total**
1 Panaji	Don Bosco HS/HSS , Panaji	419	181	192	179	1048	58	116	116	0	58	116	105	0	569
	The Progress High School, Panaji		45	85	70	338									
	People's HS/HSS, Panaji		120	120	116	683	40	45	41	84	42	43	41	75	411
	Mary Immaculate Girls High School, Rua De Ourem Panaji	529	159	154	155	973									
	Kasturba Matoshri High School, Panaji		36	28	24	206									
	Don Bosco Night High School, Panaji		2	4	15	27									
	Dr. T. B. Cunha Government Higher Secondary School, Panaji						52	19	20	0	35	31	22	0	179
					559		**150**	**180**	**177**	**84**	**135**	**190**	**168**	**75**	**1159**
2 Taligao/ Donapaula	St. Michael HS/HSS, Taleigao		143	135	150	941	120	120	0	0	103	131	0	0	474
	Royale Secondary School, Sailem Bhat Taleigao		33	31	36	191									

	Auxilium High School, Caranzalem	351	93	73	**78**	506									
	Our Lady of Rosary HS/ Our Lady of the Rosary HSS, Dona Paula	391	141	133	**130**	768	181	65	49	0	53	66	43	0	457
	Government High School, Donapaula	391	24	44	**13**	164									
					407		**301**	**185**	**49**	**0**	**156**	**197**	**43**	**0**	**931**
3 St. Cruz/ Merces/ Chimbel	Santa Cruz HS/ HSS, Santa Cruz	425	149	144	**120**	837	60	55	45	0	55	49	44	0	308
	Our Lady of Merces High School, Merces	365	87	86	**67**	519									
	Jadeed Urdu High School, Chimbel	228	20	13	**11**	272									
	Jadeed English High School, Chimbel		19			128									
	Union High School, Chimbel	80	10	13	**12**	89									
	Government High School, Merces		7	17	**9**	86									
	Government High School, Kirlawada Chimbel		32	22	**14**	155									
	Husm Sahara Chimble	30				30 (only 5th and 6th)									
					233		**60**	**55**	**45**	**0**	**55**	**49**	**44**	**0**	**308**

4 Cujira	Dr. K. B. Hedgewar HS/HSS, Dada Vaidya Road Cujira	460	116	128	**121**	753	40	45	55	0	44	48	56	0	288
	Mustifund HS/ Mustifund HSS, Cujira	280	214	250	**231**	1430	0	62	94	0	0	62	94	0	312
	The Rosary High School, Cujira		155	135	**120**	834									
	Anjuman Nurul Islam High School, Panaji	70	43	38	**66**	270									
	DCT'S Vasantrao Dempo Higher Secondary School Of Arts,Science & Commerce, Cujira						90	190	190	0	80	156	151	0	857
					538		**130**	**297**	**339**	**0**					
5 Ribandar/ Old Goa/ Corlim/ karmali	Old Goa Education Institute/ Vassant V.S. Kukalekar HSS Of Arts & Commerce, Ella Old Goa		60	83	**28**	342	25	20	0	0	38	18	0	0	101
	Bhal Bharati Vidyamandir, Ribandar	177	76	69	**80**	463									
	Madkaikar Navchaitanya HS/Madkaikar HSS of Arts & Science, Corlim	323	83	73	**83**	495	19	0	11	0	14	0	23	0	67
	Jesus and Mary Sarvajanik High School, Carambolim Corlim	213	52	49	**47**	284									

	Smt Sunandabai Bandodkar High School, Carambolim		10	35	18	115									
					256		**44**	**20**	**11**	**0**					
6 Chodan/ Diwar/ St Istev/ Cumbharjua	Dayanand HS/ Raghuvir and Premavati Salkar HSS of Arts & Commerce, Chorao	137	42	48	46	278	31	27	0	0	10	13	0	0	81
	St. Bartholomew's High School, Chorao	135	40	34	27	180									
	St. Aloysius High School, Piedade Diwar	90	24	29	17	134									
	Our Lady of Divar High School, Divar Piedade	135	29	35	29	200									
	St. Theresa High School, St. Estevam	350	94	95	65	506									
	Shri Saraswati High School, Juve Estevam	70	30	32	35	220									
	Shri Sharada Vidyalaya Government High School, kumbharjua Marcela		31	29	32	227									
					251		**31**	**27**	**0**	**0**					
7 Pilar/ Goa	Fr. Agnel HS/ HSS, Pilar		66	73	79	526		63	65	162	59	56	56	132	593

velha/ Neura	Government High School, Shirdao		7	9	7	65									
	Popular English High School, Goa Velha		18	19	21	144									
	St. Andrew's High School, Goa Velha	153	40	48	31	278									
	Immaculate Heart of Mary High School, Goa Velha	153	64	49	39	331									
	St. Lawrence High School, Agassaim	118	34	34	20	200									
	Azmane High School, Neura		28	27	18	145									
	Shri Dayanand Arya High School, Neura	127	36	36	29	187									
	Fairyland High School, Batim Goa Velha		31	33	19	170									
					263		0	63	65	162					593
	Total- Clusters:7 Higher Secondary: 13														

Taluka: Pernem

Cluster	School Name	Primary	VIII Strength	IX Strength	X Strength	Total	XI Arts Strength	XI Com. Strength	XI Sci. Strength	XI Voc. Strength	XII Arts Strength	XII Com. Strength	XII Sci. Strength	XII Voc. Strength	Total
CENTRAL	Government Higher Secondary School, Pernem Goa		0	0	0	0	57	60	46	96	40	47	37	61	444
	Don Bosco High School, Tuem Pernem Goa		45	46	45	136									

	Government High School, Torse Pernem Goa		44	32	35	111									
	Lokshikshan High School, Dhargal Pernem-Goa		21	25	11	57									
	Manguirish Vidyalaya English High School, Shirgal Aroba Dhargal Pernem Goa		14	15	10	39									
	Parse High school,Madhalawa Parse Pedne Goa		28	32	29	89									
	Sai Vidya Mandir, Torse Pernem Goa		26	37	30	93									
	Shree Bhagwati High School, Pernem		60	68	58	186									
	Shree Durga English High School, Parse		23	21	14	58									
	St Joseph High School, Surban wado Pernem Goa		48	53	48	149									
	Vikas High School, Valpe Virnoda Pernem Goa		23	20	30	73									
	Viscount of Pernem High School, Pernem		71	85	99	255									
					409		**57**	**60**	**46**	**96**					
EAST	Sharada Higher Secondary School of Arts ,commerce and Agriculture (Voc.), Bhendale Ozari Pernem		0	0	0	0	17	10	0	26	9	5	0	9	76

	Alorna Panchyakroshi High School, Alorna Pernem		13	20	12	45									
	Dnyandeep Academy High School, Purva Casarvarnem Pernem		8	6	3	17									
	Government High School, Dadachiwadi Dhargal Pernem		24	37	29	90									
	Government High School, Ozari Pernem		14	13	13	40									
	Government High School, Hankhane PO Ibrampur Tal. Pernem		14	15	10	39									
	Hutatma Bapu Gawas Memorial Government High School, Chandel Pernem		24	28	30	82									
	Sateri Vidya Mandir, Ibrampur Pernem Goa		20	17	23	60									
					120		17	10	0	26					
WEST	Harmal Panchakroshi Higher Secondary School and Institute of Vocational Studies ,Harmal Pernem		0	0	0	0	97	87	100	60	70	62	100	52	628
	Sapteshwar Institute for Higher Secondary Education, Duelwada,Mandre		0	0	0	0	19	18	0	41	16	16	0	28	138

	Shri Kamaleshwar Higher Secondary School, Korgao Pedne		0	0	0	0	59	49	0	0	50	38	0	0	196
	Government High School, Agarwada Pernem		23	15	13	51									
	Harmal Panchakroshi High School, Harmal Pernem		77	80	72	229									
	Ideal English High School, Palyem Pernem		17	21	28	66									
	Mandre High School, Mandrem		64	79	74	217									
	New English High School, Keri		33	32	38	103									
	Our Lady Of Mount Carmel High School, Arambol.		63	52	50	165									
	Our Lady of Rosary High School, Ashvem Mandrem Pernem		44	41	37	122									
	Peter Alvares Memorial High School, Morji Pedne		21	24	14	59									
	Pradnya High School, Devsu Korgao Pernem		22	31	17	70									
	Ramakant D Khalap High School, Mandre		22	23	29	74									
	Sant Xavier Vidyalaya ,Korgao Pernem		16	18	20	54									

	Shree Kamaleshwar High School ,Deulwada Korgaon Pernem		23	33	29	85									
	Shree Kamaleshwar High School, Pethechawada korgao Pernem		27	36	42	105									
	Vidyaprasarak High School , Morjim		44	28	31	103	0	0	0	0	0	0	0	0	
					494		**175**	**154**	**100**	**101**					
	Total- Clusters:3 Higher Secondary: 5														

Taluka: Bardez

Cluster	School Name	Primary	VIII Strength	IX Strength	X Strength	Total	XI Arts Strength	XI Com. Strength	XI Sci. Strength	XI Voc. Strength	XII Arts Strength	XII Com. Strength	XII Sci. Strength	XII Voc. Strength	Total
ASSONORA	Mae de Deus High School, Corjuem Aldona Bardez Goa		35	28	21	84									
	St Clara's High School, Auchit vaddo, Assonora, Bardez-Goa		113	101	98	312									
	St. Ann's High School, Tivim		134	127	119	380									
	St. Thomas Boys' High School, Santerxette, Aldona, Bardez		46	73	65	184									
	St. Thomas Girls High School, Aldona		71	73	60	204									

	St. Thomas Higher Secondary School, Santerxette Aldona		0	0	0		62	109	38	31	55	81	35	28	439
					363		**62**	**109**	**38**	**31**					
CALAN GUTE	Don Bosco High School, Calangute Bardez Goa		38	35	**42**	115									
	Little Flower of Jesus High School, Naika Vaddo Calangute		118	138	**117**	373									
	Lourdes Convent High School, Saligao Bardez		133	146	**146**	425									
	Our Lady of Remedies High School, Nerul Bardez		40	47	**40**	127									
	Pragati High School, Verem Bardez Goa		65	96	**53**	214									
	Sacred Heart High School, Parra		71	72	**56**	199									
	St. Dominic Savio High School (Prevoiusly known as Calangute People High School) Gaura Vaddo, Calangute		32	31	**16**	79									
	St. Joseph's High School, Calangute.		39	42	**31**	112									
	St. Joseph's High School, Arpora		76	71	**59**	206									
	St. Theresa's High School, Candolim		121	158	**122**	401									
	Vidya Niketan High School,		19	25	**12**	56									

	Naikawado.Calangute														
	St. Theresa's Higher Secondary School, Candolim						81	69	0	67	41	46	0	50	354
	Vishwanath Mahadev Parulekar Higher Secondary School, Verem						60	40	0	0	34	35	0	0	169
					694		**141**	**109**	**0**	**67**	**75**	**81**	**0**	**50**	**523**
COLVALE	Dr Babasaheb Ambedkar English High School, Kuchelim Mapusa		40	33	30	103									
	Government High School, Nadora Revora		10	21	10	41									
	Mahatma Jyotirao Phule High School, Colvale		15	22	23	60									
	People's High School, Camurlim		22	21	16	59									
	Shree Ram Vidya Mandir, Housing Board Colvale		81	71	39	191									
	Shree Shantadurga Vidyalaya, Pirna		31	45	31	107									
	St. Rita's High School, Colvale		51	55	55	161									
	Diogo Vaz Higher Secondary School, Colvale						14	25	23	0	0	0	22	0	84
	Dr. Ambedkar Higher Secondary School, Colvale						50	43	0	81	23	29	0	49	275

	Shree Shanatadurga Higher Secondary School, H No. 188 Talapwada Pirna						24	20	0	0	28	32	0	0	104
					204		**88**	**88**	**23**	**81**					
MAPUSA	Assagao Union High School, Bhouta Vaddo Assagao		62	72	32	166									
	Corner Stone High School, Karaswada Bardez		27	37	9	73									
	Dattaram Mantravadi Memorial High School, Angod Mapusa		21	22	21	64									
	Dnyanprasarak Vidyalaya, Mapusa		143	154	144	441									
	G. S. Amonkar Vidya Mandir High School, Mhapsa		173	179	177	529									
	Government High School, Namoshi Guirim		43	55	29	127									
	Janata High School, Mapusa Goa		95	93	63	251									
	Saraswat Vidyalaya, Mapusa		133	140	134	407									
	Shree Ganesh Vidyamandir High School, Ganeshpuri Housing Board Mapusa		49	55	28	132									

	St Anthony's High School, Monte de Guirim Guirim Mapusa		131	156	129	416									
	St Francis Xavier High School, Peddem Mapusa		88	87	90	265									
	St. Anthony's High School, Duler P.O Tivim Industrial Estate		86	66	74	226									
	St. Britto's High School, Mapusa		147	145	143	435									
	St. Mary's Convent High School, Althinho Mapusa		129	133	129	391									
	St. Xavier's High School, Moira		60	65	31	156									
	St. Elizabeth's High School, Pomburpa		40	33	34	107									
	D.M' S PVS Sarojini Madhusudan Kushe Higher Secondary School, Assagao						60	356	164	94	51	320	135	76	1256
	S.V.'s Purushottom Walawalkar Higher Secondary School of Arts Science & Commrece, Khorlim Mapusa						137	161	96	85	147	158	145	85	1014
	Shree Ganesh Higher Secondary School, Ganeshpuri Mhapsa						55	57	0	0	46	46	0	0	204
	St. Xavier's Higher Secondary School, Mapusa						200	210	340	150	180	202	333	145	1760

					1267		**452**	**784**	**600**	**329**	**424**	**726**	**613**	**306**	**4234**
PORVORIM															
	Chubby Cheeks Spring Valley High School, Alto Porvorim Pilerne		115	79	**84**	278									
	Dayanand Bandodkar Memorial High School, Verem Reis-Magos.		26	31	**21**	78									
	Dona Leonor Memorial (ACDIL) High School, Alto Betim		66	71	69	206									
	Government High School, Alto Betim		41	24	30	95									
	Holy Cross High School, Boa Vista Bastora		80	73	67	220									
	Holy Family High School, Porvorim		100	101	96	297									
	Jnyan Vikas School, Plot 'C', Nova Cidade Enclave, Alto-Porvorim		26	19	**15**	60									
	L. D. Samant Memorial High School, Vidya Prabodhini Educational Complex, Alto Parvari		140	157	**165**	462									
	Smt. Sunandabai Bandodkar High		24	12	**17**	53									

	School ,Salvador do Mundo														
	Triumph High School (Formally known as Dattaram K Chopdekar Memorial High School), Betim		26	42	15	83									
	Vidya Prabodhini Higher Secondary School, Porvorim		0	0	0		65	185	48	61	155	48	157	0	719
					579	**1832**	**65**	**185**	**48**	**61**	**155**	**48**	**157**	**0**	**719**
SIOLIM	Holy Cross High School, Gaunsa vaddo Sodiem Siolim		59	57	68	184									
	Keerti Vidyalaya, Siolim		30	38	36	104									
	Sacred Heart of Jesus High School, Anjuna		39	47	36	122									
	Shri Shanta Vidyalaya English Medium, Sodiem Siolim		35	33	29	97									
	Shri Vasant Vidyalaya High School, Portawado Siolim		41	44	46	131									
	St. Francis Xavier's High School, Siolim		133	123	130	386									
	St. Michael's Convent High School, Anjuna Vagator		69	72	61	202									
	St. Francis Xavier's Higher Secondary School, Bammon Vaddo Siolim		0	0	0		45	139	47	0	49	124	45	0	449

					406		45	139	47	0	49	124	45	0	449
	Total- Clusters:6 Higher Secondary: 14														

Taluka: Bicholim

Cluster	School Name	Primary	VIII Strength	IX Strength	X Strength	Total	XI Arts Strength	XI Com. Strength	XI Sci. Strength	XI Voc. Strength	XII Arts Strength	XII Com. Strength	XII Sci. Strength	XII Voc. Strength	Total
Navelim	Mahalaxmi High School, Kudnem	0	26	36	33	95									
	Government High School, Navelim	0	28	23	25	76									
	Government High School, Amona	0	44	31	38	113									
	Vividha Higher Secondary School Naveli Vivida Hr Secondary School, Navelim	0	0	0	0	0	30	31	45	65	35	32	37	57	332
					96		30	31	45	65	35	32	37	57	332
Mulgaon	Dnyanprakash Mandal's Bicholim Higher Secondary School, Mulgaon						113	112	0	0	78	87			390
	Government High School, Mulgaon		33	25	19	77									
	Government High School, Shirodwadi Mulgaon		10	8	7	25									
	Government High School, Shirgao		8	12	17	37									

	Government High School, Sal		11	13	**21**	45									
	Governemnt High School, Menkure		12	17	**25**	54									
	Shivaji Raje High School, Kholpewadi Sal	244	83	82	**87**	252									
	Government High School, Kasarpal		38	38	**23**	99									
					199		**113**	**112**	**0**	**0**					
Mayem	Vijayanand Dnyanprasark Saustha's Higher Secondary School, Mayem						35	45	0	0	28	33	0	0	141
	Vijayanand High School, Mayem		13	15	**20**	48									
	Shree Mahamaya High School, Ardhawada	55	25	28	**16**	69									
	Poira High School, post Assonora Poira		23	27	**16**	66									
					52		**35**	**45**	**0**	**0**					
Sankhali	Progress High School, Sankhali (Laxmibai Sanzgiri Memorial Primary School)	485	178	167	**159**	504									
	Dnyanjyoti High School, Karapur	0	27	17	**10**	54									

	Govind Gunaji Sawant High School, Sarvan Bicholim	0	18	20	16	54									
	Government Higher Secondary School, Sankhali					0	66	60	42	38	60	49	34	33	382
	St. John of the cross High School, Sanquelim	353	129	137	135	401									
	K. B. Hedgewar Vidyalay, Sanquelim	0	40	34	34	108									
	Gurudas P. Gauns Memorial High School, Sanquelim (Gurudas P. Gauns Memorial English Primary School)	113	63	66	45	174									
	Shri Ganesh Vidyalaya, Harvalem Sankhali		23	25	22	70									
	Other Primary Schools														
					421		66	60	42	38	60	49	34	33	382
Bicholim	Shri Shantadurga High School, Bicholim	680	194	223	213	630									
	Shri Shantadurga Higher Secondary School, Bicholim					0	114	192	223	89	102	236	198	62	1216
	2nd Lt. Jayendra J. Rane Government High School, Kudchire		34	35	34	103									

	Rauji Rane Memorial High School, Maulinguem		20	31	20	71									
	Our Lady of Grace High School, Bicholim	468	169	190	195	554									
	Radhakrishna Vidyalaya, Bicholim	109	64	116	42	222									
	Government High School, Bicholim		28	20	16	64									
	Ideal High School, Pilgao	101	40	51	42	133									
	Other Primary Schools														
					562		**114**	**192**	**223**	**89**	**102**	**236**	**198**	**62**	**1216**
Velguem	Shri Navadurga High School, Ambegal Pale	72	21	36	30	87									
	Tagore Educational Institute, P. O. Surla Pale		13	12	17	42									
	Shrimati High School, Velguem	161	46	50	66	162									
	Government High School, Tarmatha-Bhile Surla		13	16	20	49									
	Siddharth Bandodkar Higher Secondary School, Velguem						63	41	34	0	44	51	15	0	248
					133		63	41	34	0	44	51	15	0	248
	Total- Clusters:6 Higher Secondary: 6														
Taluka: Sattari															

Cluster	School Name	Primary	VIII Strength	IX Strength	X Strength	Total	XI Arts Strength	XI Com. Strength	XI Sci. Strength	XI Voc. Strength	XII Arts Strength	XII Com. Strength	XII Sci. Strength	XII Voc. Strength	Total
Valpoi	Government Higher Secondary School, Valpoi						187	47	29	57	119	46	18	25	528
	Our Lady of Lourdes Higher Secondary School, Valpoi								85				80		165
	Our Lady of Lourdes High School, Valpoi		165	146	147	458									
	Government High School, Valpoi		17	17	25	59									
	Unity High School, Nanus Valpoi		79	73	82	234									
	National High School, Valpoi		10	10	12	32									
	Shree Hanuman Vidhyalaya, Valpoi		46	60	73	179									
	Government High School, Dabem		13	13	7	33									
	L.H.B.D. Government High School, Thane		30	72	31	133									
	Government High School, Nagargao		26	38	34	98									
	Other Primary Schools														
					411		**187**	**47**	**114**	**57**	**119**	**46**	**98**	**25**	**693**
Khadki	Vidya Mandir Higher Secondary School, Khadki						44	8			39	9			100
	Shree Ram High School, Khadki		53	48	48										

	Government High School, Guleli		31	24	29											
	Government High School, Advoi		19	29	39											
	Government High School, Shelap Khurd		9	8	12											
	Government High School, Shelap Sawardem		7	13	12											
	Other Primary Schools															
					140		**44**	**8**	**0**	**0**	39	9	0	0	100	
Honda	Honda Higher Secondary School, Honda						41	25			27	17			110	
	Bhagwan Mahavir Government High School, Honda		40	49	46											
	Government High School, Bhulpal		21	19	16											
	Government High School, Pissurle		19	29	23											
	Honda High School, Honda		39	26	26											
	Other Primary Schools															
					111		**41**	**25**	0	0	27	17	0	0	110	
Parrye	Shri Bhumika Higher Secondary School, Parye Honda						123	104	147	33	113	100	115	23	758	
	Shri Bhumika High School, Parye		68	79	83											

	Vivekanand Dyanmandir High School, Keri		37	33	33										
	Government High School, Keri		42	52	60										
	Government High School, Surla		9	10	14										
	Government High School, Morle		43	34	38										
	Other Primary Schools														
					228		**123**	**104**	**147**	**33**	**113**	**100**	**115**	**23**	**758**
	Total- Clusters:4 Higher Secondary: 5														

V. Teacher Education

Vision of NEP 2020

(a) "Teacher education is vital in creating a pool of schoolteachers that will shape the next generation. Teacher preparation is an activity that requires multidisciplinary perspectives and knowledge, formation of dispositions and values, and development of practice under the best mentors. Teachers must be grounded in Indian values, languages, knowledge, ethos, and traditions including tribal traditions, while also being well-versed in the latest advances in education and pedagogy." [NEP 2020, 15.1]

(b) "Recognizing that the teachers will require training in high-quality content as well as pedagogy, teacher education will gradually be moved by 2030 into multidisciplinary colleges and universities. As colleges and universities all move towards becoming multidisciplinary, they will also aim to house outstanding education departments that offer B.Ed., M.Ed., and Ph.D. degrees in education."
[NEP 2020, 5.22]

(c) Fundamental principles of the education system include "teachers and faculty as the heart of the learning process – their recruitment, continuous professional development, positive working environments and service conditions" [NEP 2020, Principles of this Policy, p.5]

Anchors to NEP 2020

Pre-Service Teacher Education

(a) "As teacher education requires multidisciplinary inputs, and education in high- quality content as well as pedagogy, all teacher education programmes must be conducted within composite multidisciplinary institutions. To this end, all multidisciplinary universities and colleges - will aim to establish, education departments which, besides carrying out cutting-edge research in various aspects of education, will also run B.Ed. programmes, in collaboration with other departments such as psychology, philosophy, sociology, neuroscience, Indian languages, arts, music, history, literature, physical education, science and mathematics. Moreover, all stand-alone TEIs will be required to convert to multidisciplinary institutions by 2030, since they

will have to offer the 4-year integrated teacher preparation programme." [NEP 2020, 15.4]

(b) Dual-major holistic 4-year integrated teacher education programme: "The 4- year integrated B.Ed. offered by such multidisciplinary HEIs will, by 2030, become the minimal degree qualification for school teachers. The 4-year integrated B.Ed. will be a dual-major holistic Bachelor's degree, in Education as well as a specialized subject such as a language, history, music, mathematics, computer science, chemistry, economics, art, physical education, etc. Beyond the teaching of cutting-edge pedagogy, the teacher education will include grounding in sociology, history, science, psychology, early childhood care and education, foundational literacy and numeracy, knowledge of India and its values/ethos/art/traditions, and more..." [NEP 2020, 15.5]

(c) "Teacher preparation is an activity that requires multidisciplinary perspectives and knowledge, formation of dispositions and values, and development of practice under the best mentors. Teachers must be grounded in Indian values, languages, knowledge, ethos, and traditions including tribal traditions, while also being well-versed in the latest advances in education and pedagogy." [NEP 2020, 15.1] "All B.Ed. programmes will include training in time-tested as well as the most recent techniques in pedagogy, including pedagogy with respect to foundational literacy and numeracy, multi-level teaching and evaluation, teaching children with disabilities, teaching children with special interests or talents, use of educational technology, and learner-centered and collaborative learning. All B.Ed. programmes will include strong practicum training in the form of in-classroom teaching at local schools. All B.Ed. programmes will also emphasize the practice of the Fundamental Duties (Article 51A) of the Indian Constitution along with other Constitutional provisions while teaching any subject or performing any activity. It will also appropriately integrate environmental awareness and sensitivity towards its conservation and sustainable development, so that environment education becomes an integral part of school curricula....." [NEP 2020, 5.24]

(d) "Each higher education institution will have a network of government and private schools to work closely with, where potential teachers will student-teach along with participating in other activities such as community service, adult and vocational education, etc." [NEP 2020, 15.6]

(e) Stage-specific teacher education programme: "Teacher education for all levels - Foundational, Preparatory, Middle, and Secondary - will take place within the university/higher education system as a stage-specific, four-year integrated B.Ed. programme, combining content, pedagogy, and practical training. The four-year integrated B.Ed. programme of pre-service teacher preparation for different tracks will be offered at the university level as a dual-degree (in education together with any desired specialized subject) undergraduate programme of study and will thus include both disciplinary as well as teacher preparation courses."

The different tracks that teachers will be prepared for in a B.Ed. programme will include:

1) Foundational and Preparatory school generalist teachers
2) Subject teachers for Middle and Secondary school
3) Special education teachers
4) Art teachers (including visual and performing arts)
5) Teachers for vocational education and
6) Physical education teachers

The four-year degree will be on par with other undergraduate degrees and students with a four-year integrated B.Ed. will be eligible to move on to a Master's degree programme in either the disciplinary stream or the pedagogic stream." [DNEP 2019, P5.5.1]

(f) "Higher education institutions (HEIs) offering teacher education programmes will ensure the availability of a range of experts in education and related disciplines as well as specialized subjects." [NEP 2020, 15.6] "The faculty profile in Departments of Education will necessarily aim to be diverse and but teaching/field/research experience will be highly valued. Faculty with training in areas of social sciences that are directly relevant to school education e.g., psychology, child development, linguistics, sociology, philosophy, economics, and political science as well as from

science education, mathematics education, social science education, and language education programmes will be attracted and retained in teacher education institutions, to strengthen multidisciplinary education of teachers and provide rigor in conceptual development". [NEP 2020, 15.8]

(g) Types of teacher education programmes:

1) **4-year integrated teacher education programme**: "By 2030, the minimum degree qualification for teaching will be a 4-year integrated B.Ed. degree that teaches a range of knowledge content and pedagogy and includes strong practicum training in the form of student-teaching at local schools." [NEP 2020, 5.23]

2) **2-year B.Ed programme**: "The 2-year B.Ed. programmes will also be offered, by the same multidisciplinary institutions offering the 4-year integrated B.Ed., and will be intended only for those who have already obtained Bachelor's Degrees in other specialized subjects." [NEP 2020, 5.23]

3) **1-year B.Ed programme:** "These B.Ed. programmes may also be suitably adapted as 1-year B.Ed. programmes, and will be offered only to those who have completed the equivalent of 4-year multidisciplinary Bachelor's Degrees or who have obtained a Master's degree in a specialty and wish to become a subject teacher in that specialty." [NEP 2020, 5.23]
"All such B.Ed. degrees would be offered only by accredited multidisciplinary higher education institutions offering 4-year integrated B.Ed. programmes". [NEP 2020, 5.23]

(h) "In order to improve and reach the levels of integrity and credibility required to restore the prestige of the teaching profession, the Regulatory System shall be empowered to take stringent action against substandard and dysfunctional teacher education institutions (TEIs) that do not meet basic educational criteria, after giving one year for remedy of the breaches. By 2030, only educationally sound, multidisciplinary, and integrated teacher education programmes shall be in force." [NEP 2020, 15.3]

In-service Teacher Education

(i) "Teachers will be given continuous opportunities for self-improvement and to learn the latest innovations and advances in their professions. These will be offered in multiple modes, including in the form of local, regional, state, national, and international workshops as well as online teacher development modules. Platforms (especially online platforms) will be developed so that teachers may share ideas and best practices. Each teacher will be expected to participate in at least 50 hours of CPD opportunities every year for their own professional development, driven by their own interests. CPD opportunities will, in particular, systematically cover the latest pedagogies regarding foundational literacy and numeracy, formative and adaptive assessment of learning outcomes, competency-based learning, and related pedagogies, such as experiential learning, arts-integrated, sports-integrated, and storytelling-based approaches, etc." [NEP 2020, 5.15]

(ii) "School Principals and school complex leaders will have similar modular leadership/management workshops and online development opportunities and platforms to continuously improve their own leadership and management skills, and so that they too may share best practices with each other. Such leaders will also be expected to participate in 50 hours or more of CPD modules per year, covering leadership and management, as well as content and pedagogy with a focus on preparing and implementing pedagogical plans based on competency- based education." [NEP 2020, 5.16]

(iii) "Special shorter local teacher education programmes will also be available at BITEs, DIETs, or at school complexes themselves for eminent local persons who can be hired to teach at schools or school complexes as 'master instructors', for the purpose of promoting local professions, knowledge, and skills, e.g., local art, music, agriculture, business, sports, carpentry, and other vocational crafts."
[NEP 2020, 5.25]

(iv) "Shorter post-B.Ed. certification courses will also be made widely available, at multidisciplinary colleges and universities, to teachers who may wish to move into more specialized areas of teaching, such as the teaching of students with disabilities,

or into leadership and management positions in the schooling system, or to move from one stage to another between foundational, preparatory, middle, and secondary stages." [NEP 2020, 5.26]

(v) "**Flexible and modular approach to continuous professional development for teachers: Teachers must have access to more short courses that are certified, for modular approaches that allow them to accumulate credits and earn certificates and diplomas, even leading to professional degrees (including an M.A. in Education or M.Ed. degrees). Such courses must be offered in a range of formats including part time, evening, blended, and online in addition to full time programmes either by Departments of Education at Universities or at Centres of Professional Development that are accredited.** Teachers must also have opportunities for research, access to professional communities through which they develop and share their professional knowledge. Teachers who are in service need to be seen as an important student clientele by Departments of Education at universities, so that programmes that meet their requirements for research and further study are developed and offered. These requirements and avenues of professional development are over and above other avenues that are already well established presently, including workshops, seminars, short courses, teacher meets, and also certificate and diploma courses for various areas of pedagogy and related skills. understanding of education, school social work, administration and leadership." [DNEP P5.3.1]

(vi) "Revamping continuous professional development: All CPD will be redesigned. keeping in mind the following considerations:

a) A well-integrated CPD curriculum will be developed for all stages and subjects including subject content, pedagogical content knowledge, development of school culture, classroom practice, and - in cases of principals/headmasters/school complex leaders - also management, administration, resource sharing, effective handling of finances, and leadership.

b) "Teachers must be able to choose what they want to learn, the content as well as the delivery methods. Teachers will have the opportunity to choose from multiple modes of learning - namely, expert-driven, peer-supported, or self-

directed; in-person workshops, blended, or online; etc. - which would be all informed by the CPD curriculum and will include short and long-duration workshops, short discussions, exposure visits, in-class demonstrations, online apps and content, and other creative methods. Teachers will complete, at minimum, 50 hours of CPD training per year,
across all platforms, as per their choosing." [DNEP 2019, P5.3.2]

(vii) "Self-directed personal development of teachers: All States should adopt a technology-based system for enabling choice-based CPD and to track the professional trajectory of each teacher. This system must be used for developmental purposes by the teacher as well as head teachers and principals and be based on a personal development plan and goals. Professional learning communities and centres must be created, developed and sustained. While such efforts do require great academic and social expertise, they must be carried out so that a culture of self/peer learning is developed rather than a "command and control"-type directed learning. CPD must be delivered within school complexes by making use of the nearest CRCs, which can be upgraded into well-resourced and pleasant environments, offering platforms for peer learning. Mechanisms for regular interactions, such as school complex meetings, may also be utilized for peer-supported CPD." [DNEP 2019, P5.3.3]

(viii) **"Online resources for continuous professional development:** ICT will also be utilized extensively for CPD. Teachers will be given access to the internet and to technology platforms both at school and from their homes. There will be no centralized determination of the curriculum, no cascade-model training and no rigid norms. The resource people for delivering these CPD programmes will be carefully selected, effectively trained, and will have tenure in the role. The capacity of these resource persons / teacher educators will have considerable impact on the quality of the CPDs so they will be suitably invested in. Such resource persons will most often be selected from amongst the best teachers, and they must be given every opportunity to develop their knowledge continually. Collaboration with civil society organizations will be encouraged for the development and execution of effective CPD. The programmes will be based on a coherent curriculum framework that

addresses issues relevant to the practice of teaching, including perspectives in education, content, pedagogy, inter-related nature of subjects, school culture, governance, management, resource sharing, and leadership." [DNEP 2019, P5.3.4]

(ix) "In-school teacher development processes: Every head teacher and/or school principal will be responsible for building strong in-school teacher development processes and a supportive school culture that enhances the capabilities of all the teachers in the school. This task will be integrated into their role definition and evaluation. In this effort, the teachers and the head teacher/principal can receive support from the larger community available to them within the school complex." [DNEP 2019, P5.3.5]

Implications of transitioning to a new curricular/pedagogical structure of school education

(x) Curricular and pedagogical structure of school education: "The curricular and pedagogical structure of school education will be reconfigured to make it responsive and relevant to the developmental needs and interests of learners at different stages of their development, corresponding to the age ranges of 3-8, 8-11, 11-14, and 14-18 years, respectively. The curricular and pedagogical structure and the curricular framework for school education will therefore be guided by a 5+3+3+4 design, consisting of the Foundational Stage (in two parts, that is, 3 years of Anganwadi/pre-school + 2 years in primary school in Grades 1-2; both together covering ages 3-8), Preparatory Stage (Grades 3-5, covering ages 8-11), Middle Stage (Grades 6-8, covering ages 11-14), and Secondary Stage (Grades 9-12 in two phases, i.e., 9 and 10 in the first and 11 and 12 in the second, covering ages 14-18)". [NEP 2020, 4.1]

(xi) **5+3+3+4 curricular and pedagogical structure of school education:** "The Foundational Stage will consist of five years of flexible, multilevel, play/activity-based learning and the curriculum and pedagogy of ECCE as mentioned in para 1.2. The Preparatory Stage will comprise three years of education building on the play, discovery, and activity-based pedagogical and curricular style of the Foundational Stage and will also begin to incorporate some light textbooks as well as aspects of more formal but interactive classroom learning, in order to lay a solid groundwork

across subjects, including reading, writing, speaking, physical education, art, languages, science, and mathematics.

The Middle Stage will comprise three years of education, building on the pedagogical and curricular style of the Preparatory Stage, but with the introduction of subject teachers for learning and discussion of the more abstract concepts in each subject that students will be ready for at this stage across the sciences,

mathematics, arts, social sciences, and humanities. Experiential learning within each subject, and explorations of relations among different subjects, will be encouraged and emphasized despite the introduction of more specialized subjects and subject teachers. The Secondary Stage will comprise of four years of multidisciplinary study, building on the subject-oriented pedagogical and curricular style of the Middle Stage, but with greater depth, greater critical thinking, greater attention to life aspirations, and greater flexibility and student choice of subjects. In particular students would continue to have the option of exiting after Grade 10 and re-entering in the next phase to pursue vocational or any other courses available in Grades 11-12, including at a more specialized school, if so desired". [NEP 2020, 4.2]

(xii) Experiential learning as a pedagogical approach: "In all stages, experiential learning will be adopted, including hands-on learning, arts-integrated and sports-integrated education, story-telling-based pedagogy, among others, as standard pedagogy within each subject, and with explorations of relations

among different subjects." [NEP 2020, 4.6]

(xiii) Art-integration as a cross-curricular pedagogical approach: "Art-integration is a cross-curricular pedagogical approach that utilizes various aspects and forms of art and culture as the basis for learning of concepts across subjects. As a part of the thrust on experiential learning, art-integrated education will be embedded in classroom transactions not only for creating joyful classrooms, but also for imbibing the Indian ethos through integration of Indian art and culture in the teaching and learning process at every level. This art-integrated approach will strengthen the linkages between education and culture." [NEP 2020, 4.7]

(xiv) Sports-integration as a cross-curricular pedagogical approach: "Sports- integration is another cross-curricular pedagogical approach that utilizes physical activities

including indigenous sports, in pedagogical practices to help in developing skills such as collaboration, self-initiative, self-direction, self-discipline, teamwork, responsibility, citizenship, etc. Sports-integrated learning will be undertaken in classroom transactions to help students adopt fitness as a lifelong attitude and to achieve the related life skills along with the levels of fitness as envisaged in the Fit India Movement. The need to integrate sports in education is well recognized as it serves to foster holistic development by promoting physical and psychological well-being while also enhancing cognitive abilities." [NEP 2020, 4.8]

(xv) Support for students with special talents: "There are innate talents in every student, which must be discovered, nurtured, fostered, and developed. These talents may express themselves in the form of varying interests, dispositions, and capacities. Those students that show particularly strong interests and capacities in a given realm must be encouraged to pursue that realm beyond the general school curriculum. Teacher education will include methods for the recognition and fostering of such student talents and interests. ... B.Ed. programmes may also allow a specialization in the education of gifted children." [NEP 2020, 4.43]. "Teachers will aim to encourage students with singular interests and/or talents in the classroom by giving them supplementary enrichment material and guidance and encouragement." [NEP 2020, 4.44]

(xvi) Autonomy to teachers in choosing aspects of pedagogy and focus on socio-emotional learning: "Teachers will be given more autonomy in choosing aspects of pedagogy, so that they may teach in the manner they find most effective for the students in their classrooms. Teachers will also focus on socio-emotional learning – a critical aspect of any student's holistic development." [NEP 2020, 5.14]

Present Scenario

In the State of Goa following Educational Institutes are functioning.

Sr.No	Name of the Institution	Course offered	Medium of Instruction	Intake capacity
1	District Institute of Educational Training (DIET)	D.El.Ed	English and Marathi	100
2	Shree Vetal Institute of Educaktion	D.El.Ed	English	50
3	Nirmal Institute of Education	D.El.Ed	English	50
4	St. Joseph Vaz Institute of Education	D.El.Ed	English	50
5	GVMs College of Education	B.Ed	English	100
6	Nirmala College of Education	B.Ed	English	100
7	PES College of Education	B.Ed	English	100
8	Vidya Prabhodini College of Education	BA BEd	English	100
9	Ganpat Parsekar College of Education	BA BEd BSc BEd	English English	50 50

Recommendations

A) Recruitment and deployment:

a. Teachers truly shape the future of our children and therefore of the Nation. The quality of training, recruitment, deployment, service conditions and empowerment of teachers needs to improve and it is to be in accordance with latest NCTE guidelines.

b. Students from rural areas should be encouraged to become teachers through Merit based scholarships. These trained teachers would be in a better position to join the rural schools and would be able to understand those students. Recruitment Rules needs to be revisited.

The Government needs to provide local housing near rural schools for teachers.

c. Excessive transfers of Teachers should be restricted. Teachers in rural schools need to invest their time to uplift the local communities. This will enable students to emulate their "role model teachers".

d. Teacher Eligibility Tests (TET) conducted by the National Testing Agency / State nominated agency like SCERT should be made mandatory for employment of teachers begin with Foundation stage (pre-primary) to Secondary stage (Higher Secondary schools).

e. Appointment of School Heads shall be on merit and seniority and Incentives – merit based / CAS (Career Advancement Scheme).

f. Physical Education teachers, Art teachers, Vocational Education teachers and Language teachers should be recruited in School Complexes and their services could be shared by member schools of the cluster school complex.

g. The Head of the School complexes should be empowered to engage the services of local eminent persons/ experts as "Specialised Instructors" in various subjects such as traditional local arts, vocational crafts, entrepreneurship and agriculture which would benefit the students and help promote local knowledge and help students preserve their culture.

h. working environment / Service conditions should ensure decent and pleasant service conditions at schools with adequate and safe infrastructure.

i. washrooms (toilet facilities), clean drinking water, clean and attractive spaces, electricity, computing devices, internet, libraries, and sports and recreational resources shall be provided to all schools to ensure that teachers and students,

including children of all genders and children with disabilities, receive a safe, inclusive, and effective learning environment and are comfortable and inspired to teach and learn in their schools.

j. State- wise teacher requirement planning is required for the next decade. Teacher training Institutions shall be involved in training Science, Social Sciences, Commerce, Languages and Mathematics teachers periodically to meet the challenges of continues professional development as envisaged in NEP 2020.

B) Professional standards for teachers

National Professional Standards for Teachers (NPST) would be developed in 2022 by NCERT. This would include expectations of the role of the teacher. The NPST would also design Pre-service teacher education programmes. Promotions and salary increments should not be based on length of service or seniority but on outstanding work done by the teacher. Guidelines shall have to be in place. Soon after the state receive the NPST from NCERT the competent authority in the state should make it applicable to all the teachers teaching in the schools in the state of Goa.

C) Special Education

There is an urgent need for additional special educators. Training of special educators to teach children with disabilities/divyang children. Presently the State Government has taken the initiative of starting a Teacher Training Institution at Bogda, Vasco from the academic year (2020-2021) to train Special Education Teachers to serve the needs of the State. Lecturers in this field are difficult to identify. Teachers need to be trained in the relevant skills for the understanding of such special requirements of these children.

D) Approach to teacher education

- Competent teachers will require training in high quality content as well as pedagogy. By 2030 there shall be only multi-disciplinary Institutions for Teacher Education. Good teachers will require training in high quality content as well as pedagogy.
- By 2030 there will be only multi-disciplinary Institutions for Teacher Education. Two years B.Ed will also exist. Idea of a One- year B.Ed could also be implemented for those having done a Four Year Professional Programme and still want to teach.

- All Teacher training programmes will focus on modern techniques/ technology and pedagogy. Pedagogy w.r.t Foundational literacy numeracy multi-level teaching and evaluation would be the key aspects of training.
- Use of Education Technology would be of primary importance.
- Teacher training programmes would be learner centered and should emphasize on collaborative learning. There should be strong practical based training in schools in the vicinity of the teacher training colleges. Teacher training programmes shall include Fundamental Duties (Article 51 A of the Indian Constitution).
- Short term training programmes shall be made available through DIETs and BITEs (Block Institutes of Educational Training) or at School Complexes as per the NCTE guidelines.
- NCFTE (National Curriculum Framework on Teacher Education) 2009 will be revisited and a new NCFTE 2022 will emerge and revisited every five years. The State will also initiate action as per NCFTE 2022.
- Teachers must be grounded in Indian values, languages, knowledge, ethos and traditions and well versed in latest advances in education and pedagogy. Need to improve levels of integrity and credibility to revive the prestige of the teaching profession.

E. Restructuring of Teacher Education institutes

- The restructuring of present teacher education institutes are to be done by Directorate of Higher Education in consultation with Director of Education – Goa and Director of SCERT Goa as per the need analysis.
- While restructuring following points are to be taken into consideration.
  a) Yearly requirement of teachers at different stages based on retirement of teachers on superannuation and opening of new schools at different levels.
  b) Equal number of subject distributions for the seats in Science and Arts streams in Teacher Education Institutes.
  c) Exploring the feasibility of Upgradation of existing D.El.Ed Institutions if required.

- NEP 2020 recommends following type of teacher education institutions in the Country. Hence same pattern the state has to follow to meet the National standard by 2030.

  (1) **4-year integrated teacher education programme**: "By 2030, the minimum degree qualification for teaching will be a 4-year integrated B.Ed. degree that teaches a range of knowledge content and pedagogy and includes strong practicum training in the form of student-teaching at local schools." [NEP 2020, 5.23]

  (2) **2-year B.Ed programme**: "The 2-year B.Ed. programmes will also be offered, by the same multidisciplinary institutions offering the 4-year integrated B.Ed., and will be intended only for those who have already obtained Bachelor's Degrees in other specialized subjects." [NEP 2020, 5.23]

  (3) **1-year B.Ed programme:** "These B.Ed. programmes may also be suitably adapted as 1-year B.Ed. programmes, and will be offered only to those who have completed the equivalent of 4-year multidisciplinary Bachelor's Degrees or who have obtained a Master's degree in a specialty and wish to become a subject teacher in that specialty." [NEP 2020, 5.23]

  "All such B.Ed. degrees would be offered only by accredited multidisciplinary higher education institutions offering 4-year integrated B.Ed. programmes". [NEP 2020, 5.23]

F. Continuous Profesional Development (CPD)

- Teacher Educators need to attend at least 50 hours training programme offline /online every year conducted by NCERT/National and State bodies of repute.
- Attend other training programmes so as to improve the quality of content and knowledge.
- The state bodies like SCERT should draw the central master plan of all training programmes including CPD training of 50 hours duration which is mandatory for all teachers and teacher educators every year. Teachers shall learn the latest innovations and advances in their professions. Attend workshops at State level, National level and at International level.

- Fifty hours of Continuous Professional Development shall include training for their own professional development, driven by their own interests.
- CPD opportunities will, in particular, systematically cover the latest pedagogies regarding foundational literacy and numeracy, formative and adaptive assessment of learning outcomes, competency-based learning, and related pedagogies, such as experiential learning, arts-integrated, sports-integrated and storytelling-based approaches, etc.
- Need to verify present school infrastructure, as approx. 600 Govt. Primary schools function in 1/ 2 room buildings
- In-service training shall have inputs on safety, health and environment at workplace to ensure that all teachers are sensitized to these requirements
- In teacher education sincere efforts are needed to make teachers well equipped with appropriate training to cope up with surrounding situation by imparting knowledge of varied skills and experiences in the fields of folklore, developing in them the skills of telling folktales as well of recitation of folk songs. Instead of putting emphasis on imparting the 3Rs, the teachers should create conducive atmosphere for building level of understanding regarding the environment in which, they are living. Emphasis should be on practical aspects rather than of by-hearting the theoretical ideas. More efforts are needed to develop listening and speaking skills among them, so that they will impart it into their students efficiently.
- Audio-visual mediums as well as traditional wisdom of art of puppetry in the form of Toy Based Curriculum and other forms can be used.

G. Teacher Education Curriculum

While designing Teacher Education Curriculum following points are to be considered

- India is a land of 'fairs and festivals' that are deeply rooted in the traditions and customs influenced by the local environment, necessary efforts are needed to develop interest and love in enriching understanding of all these aspects among the trainees in this direction.
- In the context of Goa, students can be given more exposure for enhancing their knowledge about the local tangible and intangible assets of culture and history along with humanitarian values.

- Goa, known as a Tropical paradise and has a lot of potential in developing sustainable model of agro-horticultural and tourism and proper in-depth knowledge if imparted properly among the rural students transformation can take place in this direction.
- Training in the fields of folk dances along with imparting regular syllabus can be given by inviting the resource persons from various fields.
- For developing literary talents, reading of books on varied facets of literature can be promoted
- Efforts are needed for developing communication skills among the students, by providing the apt forums
- Activities like trekking, hiking, visit to library, museums, Science centers. Observatory, planetarium, workshops are required to be planned to develop interest in the various fields. Exposure for developing scientific research and temperament among the students are needed on the priority basis.
- Besides the sports activities as per the established patterns, necessary schedule to be organized for creating interest in traditional games, art forms and other activities.
- Goa is nestled amidst the Western Ghats and the West Coast of India that showcases the bewildering facets of biodiversity, forest, ecology and environment. Various activities are needed to be undertaken to tap the benefits of the available resources in judicious ways.
- Imparting computer literacy as well as knowledge of the environment ethics is needed along with arrangements for providing training in the life skills and counseling for mental health enrichment is the need of the hour

H. Participation of teachers and stakeholders in governance of schools

- There should be involvement of teachers, parents, ex students who are well placed in industry, prominent citizens in society on School Local Management, Governing councils and Boards of Studies.
- Developing a caring and inclusive culture in schools shall be encouraged
- No non-academic work to be given to teachers

- Teachers shall not be involved in strenuous administrative tasks and not more than a rationalized minimum time for mid-day meal related work, Election survey etc. so that they may fully concentrate on their teaching-learning duties.

I. Autonomy to teachers

Teachers will also focus on socio-emotional learning - a critical aspect of any student's holistic development. Teachers shall be recognized for novel approaches to teaching that improve learning outcomes in their classrooms.

Opportunity for self-improvement / training

- To learn the latest innovations and advances in their professions
- Attend workshop at State level, National level and at International level
- 50 hours of Continuous Professional Development for their own professional development, driven by their own interests.

CPD opportunities will, in particular, systematically cover the latest pedagogies regarding foundational literacy and numeracy, formative and adaptive assessment of learning outcomes, competency-based learning, and related pedagogies, such as experiential learning, arts-integrated, sports-integrated and storytelling-based approaches, etc.

VI. Equitable and Inclusive Education: Learning for All

"Education is the single greatest tool for achieving social justice and equality. Inclusive and equitable education - while indeed an essential goal in its own right - is also critical to achieving an inclusive and equitable society in which every citizen has the opportunity to dream, thrive, and contribute to the nation. The education system must aim to benefit India 's children so that no child loses any opportunity to learn and excel because of circumstances of birth or background. This Policy reaffirms that bridging the social category gaps in access, participation, and learning outcomes in school education"

"Socio-Economically Disadvantaged Groups (SEDGs) can be broadly categorized based on gender identities (particularly female and trans transgender individuals), socio-cultural identities (such as scheduled Castes, Scheduled Tribes, OBCs, and minorities), geographical identities (such as students from villages, small towns, and aspirational districts), disabilities (including learning disabilities), and socio-economic conditions (such as migrant communities, low income households, children in vulnerable situations, victims of or children of victims of trafficking, orphans including child beggars in urban areas, and the urban poor)." [NEP 2020,6.2]

"Recognizing, identifying, and fostering the unique capabilities of each student, by sensitizing teachers as well as parents to promote each student's holistic development in both academic and non-academic spheres" [NEP 2020, Principles of this Policy, p.5]

"respect for diversity and respect for the local context in all curriculum, pedagogy, and policy, always keeping in mind that education is a concurrent subject" [NEP 2020, Principles of this Policy, p.5]

"full equity and inclusion as the cornerstone of all educational decisions to ensure that all students are able to thrive in the education system" [NEP 2020, Principles of this Policy, p.5]

Anchors to NEP 2020

The following quotes have been taken from relevant chapters of the NEP 2020 and Draft NEP 2020 prepared by the Kasturirangan committee (DNEP 2019). Please read Section 6 of NEP 2020 and Chapter 6 of DNEP 2019 in detail.

1. "Actions must be taken urgently to understand the barriers students face and to implement proactive measures ensuring inclusive across all levels of school education" [DNEP 2019, Introduction to Chapter 6]

2. Establishment of Special Education Zones(SEZ) "States will be encouraged to declare any clearly definable area as an SEZ on the basis of clear social development and socio (e.g. tribal districts of Madhya Pradesh)" [DNEP 2019, P6.1.2].

3. Availability and capacity development of teachers: "Inclusive education will be an integral part of both pre-service teacher education as well as in in-service professional development, including for Anganwadi workers, pre-school and school teachers, school leaders, and other education functionaries" [DNEP 2019, P6.1.3].

4. Creation of inclusive school environments: "Admissions processes that go against the spirit of inclusivity will be abolished, and institutional processes (including time calendars) will reflect the diverse needs of learners and their communities. Schools will define and enforce rules and regulations to ensure privacy, dignity, safety, and access to all school resources, activities, and events (including sports and self URG" [DNEP 2019, P6.1.4] "All the above policies and measures are absolutely critical attaining full inclusion and equity for all SEDGs is a change in school culture. The culture of the system and the school must also reflect inclusion, equity and sensitivity." [NEP 2020, 6.19].

5. "What is also required is a change in school culture. All participants in the school education system, including teachers, principals, administrators, counsellors, and students, will be sensitized to the requirements of all students, the notions of inclusion and equity and the respect, dignity, and privacy of all persons. Such an educational culture will provide the best pathway to help students become empowered individuals who, in turn, will enable society to transform into one that is responsible towards will **become a key aspect of teacher education (and training for all leadership,** administrative, and other positions in schools); efforts will be made to recruit more high leaders from SEDGs in order to bring in excellent role models for all students.

6. "Students will be sensitized through this new school culture, brought in by teachers, trained social workers and counsellors as well as through corresponding changes to bring school curriculum. The school curriculum will include, early on, material on human values such as respect for all persons, empathy, tolerance, human rights, gender equality, non citizenship, inclusion, and equity. It would also include more detailed knowledge of various cultures, religions, languages, gender identities, etc. to sensitize and develop respect for diversity. Any biases and stereotypes in school curriculum will be removed, and more material will be included that is relevant and relatable to all communities." [NEP 2020, 6.20]

7. Maintenance of data related to students of SEDGs: "Up to date information for each student will be maintained in the National Repository of Educational Data (NRED)." [DNEP 2019, P6.1.5]

8. "All scholarships and other opportunities and schemes available to students from SEDGs will be coordinated and announced by a single agency and website to ensure that all students are aware of, and may apply in a simplified manner on such a 'single window [NEP 2020, 6.18][DNEP 2019, P6.1.6].

9. Education of girls as a cross-cutting theme: a key strategy in uplifting Indian society is to give concerted attention to uplifting women and girls; and a key strategy in uplifting URGs (SEDGs) is to give due attention to uplifting the women in these groups". [DNEP 2019, Introduction to Section 6.2] (This area this should be dealt with in detail in the Position Paper on Gender Education).

10. Education of children belonging to Scheduled Caste Communities and Other Backward Classes: "Bridging the social category gaps in access, participation, and learning outcomes in school education will continue to be one of the major goals of all education sector development programmes". [DNEP 2019, Introduction to Section 6.3].

11. Education of children from tribal communities: "Children from tribal communities often report finding their school education irrelevant and foreign to their lives, both culturally and academically" [DNEP 2019, Introduction to Section 6.4]. "special

mechanisms need to be made to ensure that children belonging to tribal communities receive the benefits of these interventions".[NEP 2020, 6.2.3].

12. Education of children from educationally underrepresented groups within minority communities: "Existing traditional or religious schools may be encouraged to preserve their traditions and pedagogical styles, but at the same time must be supported to also integrate the subject and learning areas prescribed by the National Curricular Framework into their curricula in order to reduce and eventually eliminate the underrepresentation of children from these schools in higher education". [DNEP 2019, Introduction to Section 6.5].

13. Education of children from urban poor families: "lack of literacy and proper schooling and playing opportunities, often leads children and adolescents into unfortunate and harmful activities, including petty crime and drugs; an estimated one third of street children are dealing with substance abuse". [DNEP 2019, Introduction to Section 6.6]

14. Education of transgender children: "The Policy recognises the urgent need to address matters related to education of transgender children and initiating appropriate measure to remove the stigma and discrimination they face in their life, including with respect to education." [DNEP 2019, Introduction to Section 6.7] (This area must be dealt with in detail in the Position Paper on Gender Education).

15. Education of children with disabilities (CwD): "The Rights of Persons with Disabilities (RPWD) Act 2016 defines inclusive education as a 'system of education wherein students with and without disabilities learn together and the system of teaching and learning is suitably adapted to meet the learning needs of different types of students with disabilities'. This Policy is in complete consonance with the provisions of the RPWD Act 2016 and endorses all its recommendations with regard to school education." [NEP 2020, 6.10].

16. "The awareness and knowledge of how to teach children with specific disabilities (including learning disabilities) will be an integral part of all teacher education programmes, along with gender sensitization and sensitization towards all

underrepresented groups (SEDGs) in order to reverse their underrepresentation [NEP 2020, 6.14]

Present Scenario

According to U-DISE 2016-17 data, about 19.6% of students belong to Scheduled Castes at the primary level, but this fraction falls to 17.3% at the higher secondary level. These enrolment drop - offs are more severe for Scheduled Tribes students (10.6% to 6.8%), and differently-abled children (1.1% to 0.25%), with even greater declines for female students within each of these categories. The decline in enrolment in higher education is even steeper.

A multiplicity of factors, including lack of access to quality schools, poverty, social mores & customs, and language have had a detrimental effect on rates of enrolment and retention among the Scheduled Castes. Bridging these gaps in access, participation, and learning outcomes of children belonging to Scheduled Castes will continue to be one of the major goals. Also, the Other Backward Classes (OBCs) which have been identified on the basis of historically being socially and educationally backward also need special focus.

Tribal communities and children from Scheduled Tribes also face disadvantages at multiple levels due to various historical and geographical factors. Children from tribal communities often find their school education irrelevant and foreign to their lives, both culturally and academically. While several programmatic interventions to uplift children from tribal communities are currently in place, and will continue to be pursued, special mechanisms need to be made to ensure that children belonging to tribal communities receive the benefits of these interventions.

Recommendations:

1. **SCSGV:-** For purpose of implementing the NEP, 2020 in the state of Goa we recommend that every child of school going age must be admitted irrespective of the physical fitness or any kind of disability, domicile status, irrespective of shelter security, nomadic or semi nomadic nature of parents, mother tongue in respective institutions recognized by the Goa government and no child should be found on street or idling at home or forced to do work illegally anywhere in the state of Goa and where formal institutional education is not possible all the efforts to be made for informal or doorstep education matching the level of students in formal education system under the NEP, 2020.

2. This Policy reaffirms that bridging the social category gaps in access, participation, and learning outcomes in school education will continue to be one of the major goals of all education sector development programmes.

3. **SCSGV:** -There is a need to reduce the between developed and highly urbanized "old conquest talukas" and less developed and less urbanized "new conquest talukas" as seen from shortfall in infrastructure, enrollment, availability of educational resources and facilities on par with developed talukas.

4. There is a need to focus on Children from migrant communities and with learning disabilities. As compared to rest of the SEDGs these two categories need more attention. Many welfare programs for these two categories have commenced late which has to be popularise through different media for the benefit of the Children.

5. The Policy also recognizes the importance of creating enabling mechanisms for providing Children with Special Needs (CWSN) or Divyang, the same opportunities of obtaining quality education as any other child. Therefore, Directorate of Education, has to revamp / revisit the schemes related to CWSN in consonance with Social Welfare Department and Tribal Welfare Department

6. It must be noted that women cut across all underrepresented groups, making up about half of all SEDGs. Unfortunately, the exclusion and inequity that SEDGs face is only amplified

for the women in these SEDGs. The policy additionally recognizes the special and critical role that women play in society and in shaping social mores; therefore, providing a quality education to girls is the best way to increase the education levels for these SEDGs, not just in the present but also in future generations. The policy thus recommends that the policies and schemes designed to include students from SEDGs should be especially targeted towards girls in these SEDGs.

7. In addition, the Government of India will constitute a 'Gender-Inclusion Fund' to build the nation's capacity to provide equitable quality education for all girls as well as transgender students. The fund will be available to States to implement priorities determined by the Central government 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.); funds will also enable States to support and scale effective community-based interventions that address local context- specific barriers to female and transgender children's access to and participation in education. Similar 'Inclusion Fund' schemes shall also be developed to address analogous access issues for other SEDGs. In essence, this Policy aims to eliminate any remaining disparity in access to education (including vocational education) for children from any gender or other socio-economically disadvantaged group.

8. This Policy is in complete consonance with the provisions of the RPWD Act 2016 and endorses all its recommendations with regard to school education. While preparing the National Curriculum Framework, NCERT will ensure that consultations are held with expert bodies such as National Institutes of DEPwD. To this end, schools/school complexes are to 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. Barrier free access for all children with disabilities will be enabled as per the RPWD Act. Different categories of children with disabilities have differing needs. Schools and school complexes will work and be supported for providing all children with disabilities accommodations and support mechanisms tailored to suit their needs and to ensure their full participation and inclusion in the classroom. In particular, assistive devices and appropriate technology-based tools, as well as adequate and language-

appropriate teaching-learning materials (e.g., textbooks in accessible formats such as large print and Braille) will be made available to help children with disabilities integrate more easily into classrooms and engage with teachers and their peers. This will apply to all school activities including arts, sports, and vocational education. NIOS will develop high-quality modules to teach Indian Sign Language, and to teach other basic subjects using Indian Sign Language. Adequate attention will be paid to the safety and security of children with disabilities.

9. As per the RPWD Act 2016, children with benchmark disabilities shall have the choice of regular or special schooling. Resource centres in conjunction with special educators will support the rehabilitation and educational needs of learners with severe or multiple disabilities and will assist parents/guardians in achieving high-quality home schooling and skilling for such students as needed. Home-based education will continue to be a choice available for children with severe and profound disabilities who are unable to go to schools. The children under home-based education must be treated as equal to any other child in the general system. There shall be an audit of home-based education for its efficiency and effectiveness using the principle of equity and equality of opportunity. Guidelines and standards for home-based schooling shall be developed based on this audit in line with the RPWD Act 2016. While it is clear that the education of all children with disabilities is the responsibility of the State, technology-based solutions will be used for the orientation of parents/caregivers along with wide-scale dissemination of learning materials to enable parents/caregivers to actively support their children's learning needs will be accorded priority.

10. Most classrooms have children with specific learning disabilities who need continuous support. Research is clear that the earlier such support begins, the better the chances of progress. Teachers must be helped to identify such learning disabilities early and plan specifically for their mitigation. Specific actions will include the use of appropriate technology allowing and enabling children to work at their own pace, with flexible curricula to leverage each child's strengths, and creating an ecosystem for appropriate assessment and certification. Assessment and certification agencies, including the proposed new National Assessment Centre, PARAKH, will formulate guidelines and recommend appropriate tools for conducting such assessment, from the foundational stage

to higher education (including for entrance exams), in order to ensure equitable access and opportunities for all students with learning disabilities.

12. DOE needs to create a robust mechanism to have a strong database through designated portal including all special categories such as SC/ST, OBC, EWS, CWSN, children in vulnerable situations, orphans, Children of Migrant Workers and Minorites etc.

11. The committee identified following SEDGs in Goa for the purpose of consideration within Goa under the NEP, 2020

    a. **Women** no discrimination to be done on basis of domicile status
    b. **Transgender**, irrespective of domicile status
    c. **Scheduled Castes** (SC)
    d. **Scheduled Tribals** (ST)
    e. **Other Backward Communities** (OBC)
    f. **Minorities** for state of Goa the subgroup has identified Christians, Muslims, Buddhists, Jains, Sikhs, Parsis and Jews irrespective of denominations or divisions
    g. **Rural students** identified as students from 191 village panchayats
    h. **Students from small towns** identified as those from census towns as per 2011 census with population of less than 20000
    i. **Students from aspirational districts** identified from the new conquest talukas of Pernem, Bicholim, Sattari, Sanguem, Dharbandora, Ponda, Quepem and Canacona
    j. **Students with disabilities** from all the categories known to medical science
    k. **Students from migrant communities**, the subgroup also would recommend any refugees admitted to Goa under Govt of India or UN refugee commissioner directions and any other temporary refugees sent to Goa due to manmade or natural disasters
    l. **Students from low-income households**, for the purpose of state of Goa the subgroup strongly recommends the criteria to be used as family income below the NSDP per capita income of the state of Goa is estimated at Rs 467,998 in 2018-19 at current prices. Therefore, the subgroup strongly recommends students whose family income from all sources is less than Rs. Five lakhs per year as students from

low-income household. In future implementation of NEP, 2020 from Goa need to be tied to NSDP per capita for latest available year at current prices.

m. **Children from vulnerable situations**, their status, rehabilitation and education plan under the NEP, 2020 needs to be decided on a case-by-case basis by the Goa State Commission for Protection of Child Rights as directed by the DOE

n. **Victims of trafficking**, their status, rehabilitation and education plan under NEP, 2020 to be decided on a case-by-case basis by the Goa State Commission for Protection of Child Rights as directed by the DOE

o. **Orphans including child beggars**, their status, rehabilitation and education plan under the NEP, 2020 needs to be decided by the Goa State Commission for Protection of Child Rights as directed by the DOE

p. **Children of urban poor**, their status, rehabilitation, and education plan under the NEP, 2020 needs to be decided by the Goa State Commission for Protection of Child Rights as directed by the DOE

13. The committee suggests that the government issue necessary technical directives in this regard so that with support of the machinery available at the level of local authorities the Directorate of Education could collect detailed village panchayat and municipal or corporation ward wise information about SEDGs with permanent residence and registered with UID and possessing the mandatory Aadhar Card.

14. The task force strongly recommends Government that by selecting knowledgeable representatives from PTAs, the Director of Education w.e.f. academic year 2021-22 or the financial year 2022-23 form State District and Taluka level consultative committees fully focused on students from SEDGs as we have listed above. These three-tier decision making structures would facilitate effective implementation of NEP, 2020 to benefit SEDGs at the grassroots level. At taluka level, the taluka level SEDG committee would take information from respective village and town level education committees. At the district level, the taluka level committees would be informed about the status of SEDGs at their respective talukas. Finally at the state level, the district level SEDGs would provide the necessary inputs for the state government to take correct decisions to be implemented through Directorate of Education.

15. The above decentralized consultative structure should be a permanent mechanism in the state of Goa to address all the issues of SEDGs under NEP. Their mandate, role and responsibilities would be consistent with NEP and above-mentioned international conventions, national and state legislations. Considering small size of Goa with only 2 districts and 12 talukas and a small population of students about 3 lakhs, this sub-group feels that about 125000-150000 estimated SEDGs may exist at present. So, these taluka, district and state level committees may be tasked with overall welfare of about 125000-150000 SEDGs.

16. It is recommended that a special enrollment drive for SEDGs needs to be initiated by involving NGOs and voluntary groups so that no child from SEDGs remains outside the school. We recommend that this state level community awareness drive for ensuring 100% enrollment of SEDGs should be launched every year from Republic Day January 26 and be continued vigorously for a week. The Directorate of Education should extend necessary support to all the NGOs and stakeholder representatives of SEDGs and PTAs to ensure full success.

17. Regarding identification of SEDG areas to establish special zones, the district SEDG consultative committees listed in 10 above need to identify those areas.

18. To provide quality education for all girls and transgenders and the free boarding facility, there is a need for more of Jawahar Navodaya Vidyalayas with hostels in Goa to help students from remote areas such as Canacona, Sanguem and Sattari who have to travel a long distance for their education. For this purpose, DOE need to conduct meetings with the stakeholders especially ST organizations of Goa separately.

19. The committee recommends that through Samagra Shiksha Abhiyan with its intervention needs to be worked continuously for access and quality education to girls from disadvantaged groups of girls in the age group of 10-18 years aspiring to study in Classes VI to XII; belonging to SC, ST, OBC, Minority communities and BPL families to ensure smooth transition of girls from elementary to secondary and up to class XII , KGBV to be established with the facility to have at-least one residential school for girls from Classes VI-XII in areas to be identified by the district level SEDG consultative committees mentioned in 10 above.

20. The committee recommends if required, DOE may engage any reputed registered NGOs in Goa to acquire data on transgenders. There is need to support individual transgender and gender-diverse students, including gender non conform children (intersex children). It has been brought to the notice of the subgroup that Transgender is an umbrella term for anyone diverging from the roles associated with the sex they were assigned at birth. Some trans gender children persistently and insistently express a cross-gender identity and assert that their gender, or inner sense of self as being male or female, is different from their assigned sex. Some children will assert that their gender is fluid or it is non-binary, not male or female. During their school years, they may transition from living and identifying as one gender to living and identifying as another.

21. As the policy provides details on a decline in enrollment at the secondary level, we need to know how much is the drop-out rate in Goa especially children from tribal communities who often find school education irrelevant.

22. It is important that DOE with DSW need to work out a package of strong incentives including long term scholarships for DSEGs.

23. The committee stressed the importance of complying with the Rights of Persons with Disabilities (RPWD) Act 2016 and their integration into classrooms along with the provision of braille textbooks and Indian sign language.

24. The committee recommends financial assistance for science, maths or relevant subjects to help acquire learning outcomes in order to reduce disparities in the educational development of SC/ST students and in SEDGs.

25. With regard to opening NCC wings in schools, the committee recommends a performance audit of the existing scheme since its inception in Goa and assessment of feasibility of opening the new NCC units in close consultation with the three wings of the defense forces, the territorial army, the organization of ex NCC cadets, ex NCC officers before the objectives of NEP, 2020 are implemented.

26. The committee appreciated the focus of the new policy on sensitization and emphasis on human values to bring about an inclusive system in education and recommended

production of a standard handbook, a manual on do's and don'ts and the involvement of counsellors and social workers to attain equity, equality and social justice.

27. The committee identified that the aspirational districts would include areas like Pernem, Bicholim, Sattari, Sanguem, Ponda, Quepem and Canacona.

28. Regarding wheel chair access, the committee recommends that there has to be a survey done to check how many schools are wheel chair accessible and a deadline must be given to schools to make provisions for wheel chair access

29. Training and coaching facilities should be made available to the ST students at village level for IAS, IFS, IPS and other competitive exams.Recognition of talents at young stage and proper guidance should be provided for the higher studies or specialized studies.

30. Tribal students at all level should be exposed to state level atmosphere, National level atmosphere by organizing their study tours, study visits, leadership training and guidance camps etc.

31. Eklavya model residential schools to be started at every taluka as per Navodaya pattern, for free education.

32. Hostels for ST students need to be established at taluka levels free for students through the concerned departments.

33. Anganwadi and Balwadi should have independent buildings with all the necessary infrastructure where children can enjoy their childhood and the teachers and helpers at these centres should be well trained to take care of these toddlers. At the lower level, health, hygiene and nutrition should remain a top priority.

34. Career guidance programmes and personality development modules should be introduced at the school level itself. The focus of education should be shifted to practical education.

35. The various works and skills required for agriculture, floriculture, dairy, climbing coconut trees which are required for daily livelihood must be instilled to help them to learn and earn. Besides, supervised study centres should be started to serve students in the evening hours.

36. Content-wise, value education with good morals must be introduced as a compulsory subject across all levels. Communal harmony has to be given special attention. Besides, environmental education should be made compulsory across all boards and all institutes – private and public should be made eco-friendly in all aspects. Knowledge of the forests, the eco-system and the bio-diversity hotspots must be promoted.

37. There must also be strict implementation of anti-tobacco, anti-alcohol and drug abuse laws.

38. The Chronological age may not be considered for children with special needs, on the other hand their mental age should be given more preference. Time and years are lost for a child with special needs by the time he takes medical treatment and his basic problems are identified.

39. *Example*: A child having severe convulsions or mental disorders or meningitis may not be able to be admitted to the school at the proper chronological age because of the dysfunctions in his physical and mental health.

40. In an inclusive setup, special educators who have undergone special education for all the disabilities to meet the challenging demands of children with special needs surrounded with large number of regular students should be appointed in adequate numbers.

41. In Inclusive set up adequate number of sign language interpreters to be appointed to deal with students with hearing impairment.

42. The Children with special needs learn differently and require Individualized Education Programme which should be provided under NEP, 2020

43. Children with Autism have specific behavioral disorders and a tendency for hyperactivity and need to be given special support in domestic or institutional environment including fully online or hybrid learning arrangements and planned visits by teacher mentors or facilitators. Much more attention is needed to special educational needs and support system for autist children.

44. Entrance exams may be avoided for children with Special Needs at higher level.

45. Since Children with Special needs make gradual progress having board exams at Std Vth level may not be to the advantage of these children. Infrastructure specially designed for children with special needs and opportunities to participate or compete in regular setup may not be provided.

46. Opportunities to make use of the Modified curriculum should be provided to children with special needs. Education should not be denied to any child with special needs but all care should be taken to design world class text books and a modern child friendly curriculum frame work suited to local needs and condition and not taxing the child

47. The committee recommends that customized modules for life skill education and sexual and reproductive health for children with disabilities need to be developed. It has been brought to the notice of this subgroup that Children with disabilities are more likely to be sexually abused than their nondisabled peers. Moreover, the abuse will likely be committed by someone they know and trust such as a parent, sibling, teacher, day care provider, or coach. Given this, it is critical that schools implement sexual abuse prevention and intervention programs for children with disabilities.

48. Committee stresses strongly on the Mental Health Provision in School Setting. Mental health is directly linked to educational outcomes. Schools can enhance the nature and scope of mental health interventions, fill gaps, enhance effectiveness, address problems early, and reduce stigma. Students fall victim to the stressful academic environment and the high expectations of their parents. School kids, who are at the peak of vulnerability at this age, need a neutral and non-judgmental counsellor who not only understands their feelings, but also helps them in ventilation of feelings and emotions.

49. School counsellors further need to be provided with specialized training which includes knowledge of human development, cultural diversity, counselling and consultation and techniques, appraisal and assessment, career development, etc.

50. Committee also identified the Water, Sanitation and Hygiene (WASH) in Schools as pointed out by the stakeholders and strongly recommends constitution of a separate technical group under DOE to survey, plan and implement WASH matching the best

standards of hygiene and health. The said technical group may be constituted by May 2022. The requirements for the technical group are included below.

51. Schools often lack the supplies and sanitation facilities girls need for managing their periods. The committee recommends a state level audit of all these facilities by the above technical group. Girls without adequate health care may feel discomfort or pain. Shame, stigma and misinformation may discourage girls from attending school while menstruating and prevent schools from teaching healthy attitudes about menstruation. Many girls stay home to avoid being teased.

52. Under the aegis of the Ministry of Defence, State Governments may encourage opening NCC wings in their secondary and higher secondary schools, including those located in tribal dominated areas. This will enable harnessing of the natural talent and unique potential of students, which in turn would help them to aspire to a successful career in the defence forces.

VII. Efficient Resourcing and Effective Governance through School Complexes/Clusters

One possible mechanism for accomplishing the implementation of NEP 2020 would be the establishment of school complexes/clusters, consisting of one Senior Secondary school together with all other schools offering lower grades in its neighborhood, in a radius of five to ten miles.

The aim of the school complex/cluster will be to

a) build vibrant communities of teachers, school leaders, and other supporting staff;
b) better integrate education across all school levels, from early childhood education through Grade 12, as well as vocational and adult education;
c) share key material resources, such as libraries, science laboratories and equipment, computer labs, sports facilities and equipment, as well as human resources, such as social workers, counsellors, and specialized subject teachers - including teachers for music, art, languages, and physical education - across schools in the complex; and
d) develop a critical mass of teachers, students, supporting staff, as well as equipment, infrastructure, etc. - resulting in greater resource efficiency and more effective functioning, coordination, leadership, governance, and management of schools in the schooling system.

The establishment of school complexes/clusters and the sharing of resources across complexes will have a number of other benefits as a consequence, such as significantly improved support for children with disabilities, more topic-centred clubs and academic / sports / arts / crafts events across school complexes, better incorporation of art, music, language, physical education, and other subjects in the classroom through the sharing of teachers in these subjects, better student support, enrolment, attendance, and performance through the sharing of social workers and counsellors, and School Complex Management Committees (rather than simply School Management Committees) for more robust and improved governance, monitoring, oversight, innovations, and initiatives by local stakeholders.

Building such larger communities of schools, school leaders, teachers, students, supporting staff, parents, and local citizens would energise and enable the schooling system, and in a resource-efficient manner.

The tentative cluster for Tiswadi Taluka is placed at Annexure-I.

VIII. Standard-setting and Accreditation for School Education

"It is proposed to set up a National Assessment Centre, PARAKH (Performance Assessment, Review, and Analysis of Knowledge for Holistic Development), as a standard – setting body under MHRD that fulfils the basic objectives of setting norms, standards, and guidelines for student assessment and evaluation for all recognized school boards of India, guiding the State Achievement Survey (SAS) and undertaking the National Achievement Survey (NAS), monitoring achievement of learning outcomes in the country, and encouraging and helping school boards to shift their assessment patterns towards meeting the skill requirements of the 21st century in consonance with the stated objectives of this Policy. This Centre will also advise school boards regarding new assessment patterns and latest researches, promote collaborations between school boards. It will also become an instrument for the sharing of best practices among school boards, and for ensuring equivalence of academic standards among learners across all schoolboards" [NEP 2020, 4.41].

The goal of the school education regulatory system must be to continually improve educational outcomes; it must not overly restrict schools, prevent innovation, or demoralize teachers, principals, and students. All in all, regulation must aim to empower schools and teachers with trust, enabling them to strive for excellence and perform at their very best, while ensuring the integrity of the system through the enforcement of complete transparency and full public disclosure of all finances, procedures, and educational outcomes.

At present, all main functions of governance and regulation of the school education system - namely, the provision of public education, the regulation of education institutions, and policymaking - are handled by a single body, i.e., the Department of School Education or its arms. This leads to conflict of interests and excessive centralized concentration of power; it also leads to ineffective management of the school system, as efforts towards quality educational provision are often diluted by the focus on the other roles, particularly regulation, that the Departments of School Education also perform.

The current regulatory regime also has not been able to curb the commercialization and economic exploitation of parents by many for-profit private schools, yet at the same time it has all too often inadvertently discouraged public-spirited private/philanthropic schools. There has been far too much asymmetry between the regulatory approaches to public and private schools, even though the goals of both types of schools should be the same: to provide quality education

The public education system is the foundation of a vibrant democratic society, and the way it is run must be transformed and invigorated in order to achieve the highest levels of educational outcomes for the nation. At the same time, the private/philanthropic school sector must also be encouraged and enabled to play a significant and beneficial role.

The key principles and recommendations of this Policy regarding the State school education system, the independent responsibilities within that system, and the approach to its regulation are as follows:

(a) The Department of School Education, which is the apex state-level body in school education, will be responsible for overall monitoring and policymaking for continual improvement of the public education system; it will not be involved with the provision and operation of schools or with the regulation of schools, in order to ensure due focus on the improvement of public schools and to eliminate conflict of interests.

(b) The educational operations and service provision for the public schooling system of the whole State will be handled by the Directorate of School Education (including the offices of the DEO and BEO, etc.); it will work independently to implement policies regarding educational operations and provision.

(c) An effective quality self-regulation or accreditation system will be instituted for all stages of education including pre-school education - private, public, and philanthropic - to ensure compliance with essential quality standards. To ensure that all schools follow certain minimal professional and quality standards, States/UTs will set up an independent, State-wide, body called the State School Standards Authority (SSSA). The SSSA will 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 shall be followed by all schools. The framework for these parameters will be created by the SCERT in consultation with various stakeholders, especially teachers and schools.

Transparent public self-disclosure of all the basic regulatory information, as laid down by the SSSA, will be used extensively for public oversight and accountability. The dimensions on which information has to be self-disclosed, and the format of disclosure will be decided by the SSSA in accordance with global best practices for standard-setting for schools. This information will have to be made available and kept updated

and accurate by all schools, on the aforementioned public website maintained by the SSSA and on the schools' websites. Any complaints or grievances from stakeholders or others arising out of the information placed in the public domain shall be adjudicated by the SSSA. Feedback from randomly selected students will be solicited online to ensure valuable input at regular intervals. Technology will be employed suitably to ensure efficiency and transparency in all work of the SSSA. This will bring down significantly the heavy load of regulatory mandates currently borne by schools.

(d) Academic matters, including academic standards and curricula in the State will be led by the SCERT (with close consultation and collaboration with the NCERT), which will be reinvigorated as an institution. The SCERT will develop a School Quality Assessment and Accreditation Framework (SQAAF) through wide consultations with all stakeholders. The SCERT will also lead a "change management process" for the reinvigoration of CRCs, BRCs, and DIETs which must change the capacity and work culture of these institutions in 3 years, developing them into vibrant institutions of excellence. Meanwhile, certification of competencies of students at the school-leaving stage will be handled by the Boards of Assessment/Examination in each State.

The culture, structures, and systems that empower and provide adequate resources to schools, institutions, teachers, officials, communities, and other stakeholders, will also build concomitant accountability. Each stakeholder and participant of the education system will be accountable to perform their role with the highest level of integrity, full commitment, and exemplary work ethic.

Each role of the system will have explicitly articulated role expectations and rigorous assessment of their performance vis-à-vis these expectations. The assessment system will be objective and developmentally oriented, while ensuring accountability. It will have multiple sources of feedback and assessment, to ensure a full view of the performance (and will not just be linked simplistically, e.g., to 'marks' of students). The assessment will recognize that outcomes such as educational attainment of students have multiple intervening variables and extraneous influences. It will also recognize that education requires teamwork, particularly at the level of the school. Promotion, recognition, and accountability of all individuals will be based on such performance assessment. All functionaries will be responsible to ensure that this

development, performance, and accountability system is run with high integrity, and systematically, within their span of control.

Recommendation for Standard-setting and Accreditation for School Education

1. The committee supported the idea of State School Standard Authority and recommended to follow the framework developed by NCERT to be adopted by the State.

2. Some of the important points that need to be looked into is the role of the Director of Education, the regulation of schools with the establishment of the SSSA and the role and responsibility of Academic Institutions like SCERT, DIET, BRC & CRC which should help in stopping the commercialization of education.

Key Summary Points of NEP 2020 which needs to be specially focused at implementation stage in the State along with the specific recommendations which are given in the report at every stage.

I) Foundation Stage - Early Child Care and Education

(1) Inclusion of Foundation Stage I, II & III (Nursery, KG-1, KG-2 & KG-3) in the school definition monitored through regulatory mechanism by s special cell of Directorate of Education.

(2) Inclusion could be in three ways

i. Colocation e.g Anganwadi centers are to be collocated with nearest Govt. Primary School.

ii. Amalgamation e.g the primary schools who are having very less enrolment to be amalgamated with their school management type (Govt. – Govt., Aided – Aided, Unaided – Unaided)

iii. Upgradation / Insertion e.g Govt. Primary schools which are not possible to co-locate with anganwadi centers, there pre-primary classes to be started with existing as well as appointing trained teachers.

(3) Curriculum of NCERT in consonance with NEP 2020 and adding local components to be implemented and should be made available to Govt., Aided (pre-primary schools attached to aided schools) and Unaided schools, before the school reopening.

(4) Being in the transition period of NEP 2020, training of teachers to be imparted of Govt., Aided (pre-primary schools attached to aided schools) and Unaided pre-primary schools. A well articulated training modules to be prepared and through cascade model training is to be imparted at Block level for all pre-primary teachers including anganwadi workers.

(5) Foundation Literacy and Numeracy to be introduced in mission mode through Goa Samagra Shiksha.

(6) In order to encourage toy-based learning / pedagogy, an exhibition of toy-based learning materials to be organized at District and State level through DIET.

(7) The necessary changes in the structure, entry age and curriculum are to be communicated to the stake holders with details well in advance by way of circulars, orders and through SMC meetings.

(8) The committee endorse the view of NEP 2020 that regarding the Medium of Instruction at Foundation Stage that the young children learn and grasp non-trivial

concepts more quickly in their home language/mother tongue. Wherever possible, the medium of instruction until at least Grade 5, but preferably till Grade 8 and beyond, will be the home language/mother-tongue/local language. However existing bilingual teaching learning process in Marathi, Konkani-English may continue.

(9) Recognition for pre-primary schools strictly as per the rules and regulations made by Directorate of Education. Unrecognized pre-primary schools ceased to be operational in the state.

II) Preparatory Stage and Middle Stage (3 years – Classes 6 to 8)

(1) The restructuring should be done at school level as per the NEP 2020 in a phased manner starting with Foundation Stage followed with Preparatory stage, Middle stage and Secondary stage. Accordingly, Directorate of Education should also make separate sections in their Directorate as per the stages proposed by NEP 2020 and each section should be headed by Dy. Director of Education and Asst. Director of Education.

(2) Schools that are, at present functioning only as Primary Schools to be converted as:

(a) Schools for Foundational or

(b) Schools for Foundational and Preparatory (Nursery class to class V) or

(c) Schools for Preparatory only (class 3 to class 5).

(3) The restructuring should be done in a phased manner so as to maintain continuity in the process. There is a need for mapping to make optimum use of all resources. Government Grants may be explored to develop the necessary infrastructure, Human resource at Government Aided schools attached to Aided Middle and Secondary school. However, for Government schools Directorate of Education should provide infrastructure and other necessary equipment and human resource through the State funds and ongoing central schemes like Goa Samagra Shiksha.

(4) Restructuring of the school may be initiated either by relocating, upgrading or collocating in the school complexes created for the ease of functionalities under NEP 2020 for all stages.

(5) **Restructuring School Curriculum and Pedagogy**

As mentioned in para 4.2 of the NEP "The Preparatory Stage will comprise three years of education building on the play, discovery, and activity-based

pedagogical and curricular style of the Foundational Stage, and will also begin to incorporate some light text books as well as aspects of more formal but interactive classroom learning, in order to lay a solid groundwork across subjects, including reading, writing, speaking, physical education, art, languages, science, and mathematics."

A) ***Preparatory Stage:***

i. To encourage multilingualism, both the Devanagree and Roman scripts should be introduced from class 3 itself. Teachers need to be trained to use Devanagree phonetics even in the teaching of English.

ii. In Mathematics, the international numeral set and notations should be used.

iii. In Sciences, as far as possible both local and English terms should be used.

iv. As this is an age of IT and AI, children need to be exposed to these tools right from classes 3 or 4. In this connection, the Government could explore possibilities of giving every child a tablet as part of the educational kit along with connectivity (directed through firewalls) so that the child is able to use the tablet at least in the school even if there are connectivity issues at his/her place of residence.

v. Experiential learning should be adopted, including hands-on learning, arts-integrated and sports-integrated education, story-telling-based pedagogy, among others.

B) Middle Stage:

This stage signifies the beginning of adolescence and also the introduction of concepts in various subjects

As per the NEP 2020 "The Middle Stage will comprise three years of education, building on the pedagogical and curricular style of the Preparatory Stage, but with the introduction of subject teachers for learning and discussion of the more abstract concepts in each subject that students will be ready for at this stage across the sciences, mathematics, arts, social sciences, and humanities. Experiential learning within each subject, and explorations of

relations among different subjects, will be encouraged and emphasized despite the introduction of more specialized subjects and subject teachers."

Therefore, the committee recommends the following:

i. Experiential learning should be adopted, including hands-on learning, arts-integrated and sports-integrated education, story-telling-based pedagogy, among others, as standard pedagogy within each subject, and with explorations of relations among different subjects. Every school should be encouraged to develop (1) workshop for hands-on teaching learning (2) a garden (3) kitchen in addition to a Library, a playground and a multipurpose hall

ii. Children should be exposed to vocational activities from class 6. This will create proper attitudes in the minds of the students and develop vocational skills which will help them later in life. As suggested, the workshop, laboratory, kitchen and garden could go a long way towards realizing this.

iii. Two to four days in a month or 10 days in a year should be declared as "bagless days" where children could be exposed to life skills and also local art and culture.

III. Secondary Stage (4 years – Classes 9 to 12):

A. Structure, Curriculum and Pedagogy in Schools

(1) The clusters which are indicated based on available resources however this needs to be revisited by the Directorate of Education by involving ADEIs and BRCCs.

(2) While finalizing the cluster, either of the following two models may be adopted.

Model - I

- Cluster of Govt. schools consisting of all four stages i.e Secondary, Middle, Preparatory and Foundation stage.
- Cluster of Aided schools consisting of all four stages i.e Secondary, Middle, Preparatory and Foundation stage.

- Cluster of Unaided schools consisting of all four stages i.e secondary, middle, preparatory and foundation stage.

Model-II

i. Cluster of Govt. and Aided schools consisting of all four stages i.e Secondary, Middle, Preparatory and Foundation stage.

ii. Cluster of Unaided schools consisting of all four stages i.e Secondary, Middle, Preparatory and Foundation stage.

(3) While deciding lead cluster school a guiding principles and regulations are to be prepared by the Directorate of Education.

(4) Development of skills at secondary stage: While developing different skills at secondary stage subjects which are enlisted in NSQF are to be given first preference. Then as per the need different subjects may be introduced after preparing proper syllabus for smooth transition and these subjects should also give upward mobility to a student to continue at higher education level. While implementing NSQF or vocational subjects Hub and Spoke method to be adopted within the cluster.

(5) It is recommended to take initiatives to develop resources that are curriculum aligned for essential concepts, lesson plans and question banks that would support teachers to implement an active student centric pedagogy at school level.

(6) Curriculum which is either designed or adapted from NCERT to ensure coherence continuity, efficacy and Indian knowledge system, heritage within the school curriculum across the curricular areas and school stages are also to be integrated part of it.

(7) It is recommended all schools from pre-primary to higher secondary schools are to be grouped into cluster of school complexes. In one complex required number of pre-primary schools, primary schools, upper primary schools, secondary schools and higher secondary schools should be available.

(8) In-case based on the statistical data available students are not getting facilities for smooth transition from one stage to another stage, Directorate of Education

has to take necessary steps to upgrade the existing schools to the next level as per the demanding situation either Government or Aided Schools.

(9) It is very essential to note that while fine tuning the formation of the clusters, the complete study of particular taluka should be made and in the planning process grassroot level officers are to be involved for the same.

(10) As far as possible the lead school of the cluster should be Government school. In case Government is not available Directorate of Education has to nominate an Aided School as Nodal school.

(11) All the necessary changes in the structure modalities of cluster etc. are to be incorporated in the education rules as well as act which remains common for Government and Government Aided schools.

B. Teacher Education and Efficient Resourcing

(1) Teachers qualification for recruitment should be as per NCTE guidelines based on NEP 2020. Since Diploma in Elementary Education has been replaced by 4 years integrated BEd. degree Directorate of Education has to take a decision to phasing out D.El.Ed course in the state through DIET and through three unaided D.El.Ed. Institutions.

(2) All Teacher Education degree awarding institutions come under higher education there should be proper interactions at high level in the preliminary stage while taking Govt. decisions.

(3) Continuous Professional Development (CPD) should be in-line with the guidelines issued by NCERT and SCERT has to initiate this programme in consultation with Directorate of Education.

(4) To provide quality education for all girls and transgenders and the free boarding facility, there is a need for more of Jawahar Navodaya Vidyalayas with hostels in Goa to help students from remote areas such as Canacona, Sanguem and Sattari who have to travel a long distance for their education. For this purpose, DOE need to conduct meetings with the stakeholders especially ST organizations of Goa separately.

(5) The committee recommends that through Samagra Shiksha Abhiyan with its intervention needs to be worked continuously for access and quality education to girls from disadvantaged groups of girls in the age group of 10-18 years

aspiring to study in Classes VI to XII; belonging to SC, ST, OBC, Minority communities and BPL families to ensure smooth transition of girls from elementary to secondary and up to class XII , KGBV to be established with the facility to have at-least one residential school for girls from Classes VI-XII in areas to be identified by the district level SEDG consultative committees mentioned in 10 above.

(6) After restructuring the existing designation of the Teachers as well as Heads of the Institutions are to be revised.

(7) Teacher Eligibility Tests (TET) conducted by the National Testing Agency / State nominated agency like SCERT should be made mandatory for employment of teachers begin with Foundation stage (pre-primary) to Secondary stage (Higher Secondary schools).

(8) Physical Education teachers, Art teachers, Vocational Education teachers and Language teachers should be recruited in School Complexes and their services could be shared by member schools of the cluster school complex.

(9) The Head of the School complexes should be empowered to engage the services of local eminent persons/ experts as "Specialized Instructors" in various subjects such as traditional local arts, vocational crafts, entrepreneurship and agriculture which would benefit the students and help promote local knowledge and help students preserve their culture.

(10) washrooms (toilet facilities), clean drinking water, clean and attractive spaces, electricity, computing devices, internet, libraries, and sports and recreational resources shall be provided to all schools to ensure that teachers and students, including children of all genders and children with disabilities, receive a safe, inclusive, and effective learning environment.

(11) State- wise teacher requirement planning is required for the next decade. Teacher training Institutions shall be involved in training Science, Social Sciences, Commerce, Languages and Mathematics teachers periodically to meet the challenges of continues professional development as envisaged in NEP 2020.

(12) All Teacher training programmes will focus on modern techniques/ technology and pedagogy. Pedagogy w.r.t Foundational literacy numeracy multi-level teaching and evaluation would be the key aspects of training.

(13) Use of Education Technology would be of primary importance.

(14) Short term training programmes shall be made available through DIETs and BITEs (Block Institutes of Educational Training) or at School Complexes as per the NCTE guidelines.

(15) The restructuring of present teacher education institutes are to be done by Directorate of Higher Education in consultation with Director of Education – Goa and Director of SCERT Goa as per the need analysis.

(16) NEP 2020 recommends following type of teacher education institutions in the Country. Hence same pattern the state has to follow to meet the National standard by 2030.

(i) **4-year integrated teacher education programme**: "By 2030, the minimum degree qualification for teaching will be a 4-year integrated B.Ed. degree that teaches a range of knowledge content and pedagogy and includes strong practicum training in the form of student-teaching at local schools." [NEP 2020, 5.23]

(ii) **2-year B.Ed programme**: "The 2-year B.Ed. programmes will also be offered, by the same multidisciplinary institutions offering the 4-year integrated B.Ed., and will be intended only for those who have already obtained Bachelor's Degrees in other specialized subjects." [NEP 2020, 5.23]

(iii) **1-year B.Ed programme:** "These B.Ed. programmes may also be suitably adapted as 1-year B.Ed. programmes, and will be offered only to those who have completed the equivalent of 4-year multidisciplinary Bachelor's Degrees or who have obtained a Master's degree in a specialty and wish to become a subject teacher in that specialty." [NEP 2020, 5.23]

"All such B.Ed. degrees would be offered only by accredited multidisciplinary higher education institutions offering 4-year integrated B.Ed. programmes". [NEP 2020, 5.23]

C. Equitable and Inclusive Education

(1) The task force strongly recommends Government that by selecting knowledgeable representatives from PTAs, the Director of Education w.e.f.

academic year 2021-22 or the financial year 2022-23 form State District and Taluka level consultative committees fully focused on students from SEDGs as we have listed above. These three-tier decision making structures would facilitate effective implementation of NEP, 2020 to benefit SEDGs at the grassroots level. At taluka level, the taluka level SEDG committee would take information from respective village and town level education committees. At the district level, the taluka level committees would be informed about the status of SEDGs at their respective talukas. Finally at the state level, the district level SEDGs would provide the necessary inputs for the state government to take correct decisions to be implemented through Directorate of Education.

(2) Considering small size of Goa with only 2 districts and 12 talukas and a small population of students about 3 lakhs, this sub-group feels that about 125000-150000 estimated SEDGs may exist at present. So, these taluka, district and state level committees may be tasked with overall welfare of about 125000-150000 SEDGs.

(3) It is recommended that a special enrollment drive for SEDGs needs to be initiated by involving NGOs and voluntary groups so that no child from SEDGs remains outside the school. We recommend that this state level community awareness drive for ensuring 100% enrollment of SEDGs should be launched every year from Republic Day January 26 and be continued vigorously for a week. The Directorate of Education should extend necessary support to all the NGOs and stakeholder representatives of SEDGs and PTAs to ensure full success.

(4) The committee recommends if required, DOE may engage any reputed registered NGOs in Goa to acquire data on transgenders. There is need to support individual transgender and gender-diverse students, including gender non conform children (intersex children). It has been brought to the notice of the subgroup that Transgender is an umbrella term for anyone diverging from the roles associated with the sex they were assigned at birth. Some trans gender children persistently and insistently express a cross-gender identity and assert that their gender, or inner sense of self as being male or female, is different from their assigned sex. Some children will assert that their gender

is fluid or it is non-binary, not male or female. During their school years, they may transition from living and identifying as one gender to living and identifying as another.

(5) As the policy provides details on a decline in enrollment at the secondary level, we need to know how much is the drop-out rate in Goa especially children from tribal communities who often find school education irrelevant.

(6) It is important that DOE with DSW need to work out a package of strong incentives including long term scholarships for DSEGs.

(7) The committee stressed the importance of complying with the Rights of Persons with Disabilities (RPWD) Act 2016 and their integration into classrooms along with the provision of braille textbooks and Indian sign language.

(8) The committee recommends financial assistance for science, maths or relevant subjects to help acquire learning outcomes in order to reduce disparities in the educational development of SC/ST students and in SEDGs.

(9) With regard to opening NCC wings in schools, the committee recommends a performance audit of the existing scheme since its inception in Goa and assessment of feasibility of opening the new NCC units in close consultation with the three wings of the defense forces, the territorial army, the organization of ex NCC cadets, ex NCC officers before the objectives of NEP, 2020 are implemented.

(10) The committee identified that the aspirational districts would include areas like Pernem, Bicholim, Sattari, Sanguem, Ponda, Quepem and Canacona.

(11) Regarding wheel chair access, the committee recommends that there has to be a survey done to check how many schools are wheel chair accessible and a deadline must be given to schools to make provisions for wheel chair access

(12) Training and coaching facilities should be made available to the ST students at village level for IAS, IFS, IPS and other competitive exams.Recognition of talents at young stage and proper guidance should be provided for the higher studies or specialized studies.

(13) Tribal students at all level should be exposed to state level atmosphere, National level atmosphere by organizing their study tours, study visits, leadership training and guidance camps etc.

(14) Eklavya model residential schools to be started at every taluka as per Navodaya pattern, for free education.

(15) Hostels for ST students need to be established at taluka levels free for students through the concerned departments.

(16) Anganwadi and Balwadi should have independent buildings with all the necessary infrastructure where children can enjoy their childhood and the teachers and helpers at these centres should be well trained to take care of these toddlers. At the lower level, health, hygiene and nutrition should remain a top priority.

(17) Career guidance programmes and personality development modules should be introduced at the school level itself. The focus of education should be shifted to practical education.

(18) The various works and skills required for agriculture, floriculture, dairy, climbing coconut trees which are required for daily livelihood must be instilled to help them to learn and earn. Besides, supervised study centres should be started to serve students in the evening hours.

(19) Content-wise, value education with good morals must be introduced as a compulsory subject across all levels. Communal harmony has to be given special attention. Besides, environmental education should be made compulsory across all boards and all institutes – private and public should be made eco-friendly in all aspects. Knowledge of the forests, the eco-system and the bio-diversity hotspots must be promoted.

(20) There must also be strict implementation of anti-tobacco, anti-alcohol and drug abuse laws.

(21) The Chronological age may not be considered for children with special needs, on the other hand their mental age should be given more preference. Time and years are lost for a child with special needs by the time he takes medical treatment and his basic problems are identified.

(22) *Example*: A child having severe convulsions or mental disorders or meningitis may not be able to be admitted to the school at the proper

chronological age because of the dysfunctions in his physical and mental health.

(23) In an inclusive setup, special educators who have undergone special education for all the disabilities to meet the challenging demands of children with special needs surrounded with large number of regular students should be appointed in adequate numbers.

(24) In Inclusive set up adequate number of sign language interpreters to be appointed to deal with students with hearing impairment.

(25) The Children with special needs learn differently and require Individualized Education Programme which should be provided under NEP, 2020

(26) Children with Autism have specific behavioral disorders and a tendency for hyperactivity and need to be given special support in domestic or institutional environment including fully online or hybrid learning arrangements and planned visits by teacher mentors or facilitators. Much more attention is needed to special educational needs and support system for autist children.

(27) Since Children with Special needs make gradual progress having board exams at Std Vth level may not be to the advantage of these children. Infrastructure specially designed for children with special needs and opportunities to participate or compete in regular setup may not be provided.

(28) Opportunities to make use of the Modified curriculum should be provided to children with special needs. Education should not be denied to any child with special needs but all care should be taken to design world class text books and a modern child friendly curriculum frame work suited to local needs and condition and not taxing the child

(29) The committee recommends that customized modules for life skill education and sexual and reproductive health for children with disabilities need to be developed. It has been brought to the notice of this subgroup that Children with disabilities are more likely to be sexually abused than their nondisabled peers. Moreover, the abuse will likely be committed by someone they know and trust such as a parent, sibling, teacher, day care provider, or coach. Given this, it is critical that schools implement sexual abuse prevention and intervention programs for children with disabilities.

(30) School counsellors further need to be provided with specialized training which includes knowledge of human development, cultural diversity, counselling and consultation and techniques, appraisal and assessment, career development, etc.

(31) Committee also identified the Water, Sanitation and Hygiene (WASH) in Schools as pointed out by the stakeholders and strongly recommends constitution of a separate technical group under DOE to survey, plan and implement WASH matching the best standards of hygiene and health. The said technical group may be constituted by May 2022. The requirements for the technical group are included below.

(32) Schools often lack the supplies and sanitation facilities girls need for managing their periods. The committee recommends a state level audit of all these facilities by the above technical group. Girls without adequate health care may feel discomfort or pain. Shame, stigma and misinformation may discourage girls from attending school while menstruating and prevent schools from teaching healthy attitudes about menstruation. Many girls stay home to avoid being teased.

(33) Under the aegis of the Ministry of Defence, State Governments may encourage opening NCC wings in their secondary and higher secondary schools, including those located in tribal dominated areas. This will enable harnessing of the natural talent and unique potential of students, which in turn would help them to aspire to a successful career in the defense forces.

D. Standard-setting and Accreditation for School Education

(1) The committee supported the idea of State School Standard Authority and recommended to follow the framework developed by NCERT to be adopted by the State.

(2) Some of the important points that need to be looked into is the role of the Director of Education, the regulation of schools with the establishment of the SSSA and the role and responsibility of Academic Institutions like SCERT, DIET, BRC & CRC which should help in stopping the commercialization of education.

CONCLUSION

The National Education Policy (NEP) 2020 is the first education policy of the 21st century and aims to address the many growing developmental imperatives of our country. It envisages that the purpose of education system is to develop good human beings capable of rational thoughts and action, possessing compassion and empathy, courage and resilience, scientific temper and creative imagination with sound ethical moorings and values. It aims at producing engaged, productive and contributing citizens for building an equitable, inclusive and floral society as envisages by our Constitution.

This is one of the first policy which is inter connected with the linkages between School Education and Higher Education. The initial years for implementation though it appears to be challenging, it has got long term benefits for the State and students in particular.

The recommendations are based on the outcomes of discussions held at various levels by various groups are indicative. However, this requires further expansion by involving education experts and stake holders by constituting macro level working committees for successful implementation of the policy by the department concerned.

At every stage of the implementation requires legal support of the State including necessary changes in the Education Act 1984 and Rules there on 1986. Therefore, it is advisable to constitute a separate committee for the same to make the necessary changes.

Though the policy has to be fully implemented within a period of 15 years, the department concerned shall draw necessary full action plan year wise including all components.

I am indebted to Hon'ble Chief Minister of Goa, all Members of the Task Force Committee and Member Secretary for giving me an opportunity for reflecting on National Education Policy 2020 in great depth and to contribute our thoughts in implementation of the policy for the welfare of the our children and State at large.

Place: Porvorim, Goa
Dated: 27/3/2023

(Subhash A. Shirodkar)
Chairman – Task Force Committee NEP – 2020
&
Minister of Water Resource
Development, Co-Operation &
Provedoria, Govt. of Goa

Annexure- I

School Complexes in Tiswadi:-

(This is tentative grouping. Need to work out in details. Primary schools need to be attached to secondary School in the nearest location. Same way Anganwadis need to be attached to the Govt Primary schools in the nearest location.)

School Complex 1

Panaji

Secondary schools in Complex	GPS/ Primary complexes	Anganvadis
Don Bosco	GPS Central	Althino Police Quarters, Police Quarter, Altinho, Panaji
Progress	GPS Panaji Central	St Inez Bandh, Nr Happy Kids, Tiswadi, Goa
Peoples	GPS Chinchole	Tamdimati , St Inez, Opp Hassan Electrical,Tiswadi, Goa
Marry Immaculate	GPS Ramdas Panaji	Nr shirvoikar Garage, Nr Olmar Gas, Tiswadi, Goa
Kasturbha	GPS St. Inez Tonca	Dhempebhat Tonca, Behind Chapel, Tiswadi, Goa
Don Bosco Night	GPS Tonca	Camrabhat Taleigao, Nr Govt Primary School, Tiswadi, Goa
T. B. Cunha HSS	GPS Ramdas St. Inez	Nr Ganesh Temple, Govt Quarters, ST INEZ, Tiswadi, Goa
		Nr Samrat, Panjim, Nr Palacia De Goa Hotel, Tiswadi, Goa
		Nr Sati Temple , Bhatlem, Panaji, Tiswadi, Goa
		Mala I Fontainhas, Nr Vithoba Temple, Tiswadi, Goa
		Mala II Nevginagar, Govt Primary School, Panaji, Tiswadi, Goa
		Chincholem Bhatlem, Nr Dattamandir Temple, Tiswadi, Goa
		Boca Da Vaca , Behind Mahalaxmi Temple, Panjim, Tiswadi, Goa

School Complex 2:- Taligao/Donapaula

St Michal	GPS Donapaula	Nr Old Post Caranzalem, Nr Football Ground,Tiswadi, Goa
Royal	GPS Vodle Bhat	Durgawadi Taleigao, Housing Board, Tiswadi, Goa
Auxillium	GPS St Paulo Taligao	Satismowada Taleigao, Behind Taleigao Church, Tiswadi, Goa
Our Lady of Rosary	GPS Vodle Bhat	Vodlebhat I Taleigao, Nr Govt Primary School, Tiswadi, Goa
GHS	GPS Taligao	Posrebhat Taleigao, Nr SBI Bank, Taleigao, Tiswadi, Goa
		Amaral bandh Taleigao, Nr Sateri Temple, Tiswadi, Goa
		Vodlebhat, Taleigao, Tiswadi, Goa
		Odxel Taleigao, Nr Govt Primary School, Tiswadi, Goa
		Shankarwadi Taleigao, Nr Maruti Temple, Tiswadi, Goa
		Nagally Taleigao, Tiswadi, Goa
		Kevnem Taleigao, Tiswadi, Goa
		Oitiyant, Taleigao, Tiswadi, Goa
		Sailobandh, Taleigao, Tiswadi, Goa
		Ivowada Donapaula, NIO Circle, Tiswadi, Goa
		Marvel Donapaula, Nr Jetty, DonaPaula,Tiswadi, Goa
		Dando Caranzalem, Nr Swim Sea Hotel, Tiswadi, Goa
		Mitra Bazar Carnzalem, Nr Mistique Bldg., Tiswadi, Goa
		Nairalem Caranzalem, Behind Syndicate Bank, Caranzalem, Tiswadi, Goa

School Complex 3:- St. Cruz/ Merces/Chimbel

St, Cruz H S	GPS 1st Bairo st cruz/GPS Band St. Cruz/ GPS Deulwad St. Cruz	St. Augustin St.Cruz, St. Augustin Church, Tiswadi, Goa
Our Lady of Merces	GPS Old Bamboli	Deulwada St. Cruz, Nr Shantadurga Temple, Tiswadi, Goa
Jadeed urdu	GPS Merces	Aradi St. Cruz, Nr Bandh, Tiswadi, Goa
Jadeed English		Bandh St. Cruz, Nr Bandh, Tiswadi, Goa
Union High School		Cabessa St. Cruz, Nr Bone Setter, Tiswadi, Goa
GHS Merces		Cacra St. Cruz, Nr Goa University, Tiswadi, Goa
GHS Kirlawada Chimbel		Canturlim Curca Nr Govt School, Tiswadi, Goa
		Merces waddy, Nr Maruti Temple, Merces, Tiswadi, Goa
		Bamanbhat St.Caitan, Nr Kalavati Temple, Merces, Tiswadi, Goa
		Malakwada Merces, Nr Kalavati Temple, Merces, Tiswadi, Goa
		Voilembhat -I Merces, Nr Vithoba Rukhmini Temple Devasthan, Merces, Tiswadi, Goa
		Voilembhat -II Merces Nr Sati Devasthan, Merces, Tiswadi, Goa
		Peribhat Merces, Nr Sateri Temple, Tiswadi, Goa
		Chinchwada Chimbel, Nr Govt., School, Tiswadi, Goa
		FCW Chimbel, Nr Mahadev Temple, Tiswadi, Goa
		Indiranagar I Chimbel, Nr Cremetorim, Tiswadi, Goa
		Indiranagar II Chimbel, Nr. Tamil Church, Tiswadi, Goa
		Gaulibhat -I Chimbel, Nr Chimalkarin Temple, Tiswadi, Goa
		Gaulibhat -II Shirinwada Chimbel, Nr Stream Water, Tiswadi, Goa

School Complex 4:- Cujira

Dr. K. B. Hedgewar	GPS Palem Shirdao	FCW Curca, Tiswadi, Goa
Mustifund		Wadwad Curca, Nr Govt School, Tiswadi, Goa
Rosary		Santan Curca, Nr Naguesh Temple, Tiswadi, Goa
Anjuman		Nauxim Bambolim, Nr Telephone Exchange Office, Tiswadi, Goa
GPS Shirdao		GMC Curca Bambolim, Nr Govt Quarters, Tiswadi, Goa
Dhempe HSS		Bambolim Village, Bambolim Beach, Tiswadi, Goa
		FCW Pallem, Nr Health Centre, Tiswadi, Goa
		Deulwada Pallem, Nr Sateri Temple, Tiswadi, Goa
		Madlawada Siridao, Pallem, Nr Siridao Beach, Tiswadi, Goa

School Complex 5:- Old Goa/ Ribandar/ Corli/ Karmali

Old Goa Educattion Institute	GPS Ella Old Goa	Ella Old Goa, Nr Old Goa Village Panchayat, Tiswadi, Goa
Bhalbharti	GPS corlim	Nr.Hassan Old Goa, Nr MPs Residency, Old Goa,Tiswadi, Goa
Madkaiker navchaitanya	GPSSurchem corlim	Nr. Tamba Old Goa, Nr. Tamba Query, Old Goa, Tiswadi, Goa
Jesus and Marry	GPS Malar corlim	Malar Old Goa, Nr Industrial Estate, Old Goa, Tiswadi, Goa
Sunandabai	GPS Nr Sao Pedro Old corlim	Sao Pedro Old Goa, Nr Govt Primary School, Old Goa, Tiswadi, Goa
	GPSIndiranagar corlim	Dhulapi Corlim, Nr Govt Primary School, Corlim, Tiswadi, Goa
	GPSGaulibhat -II corlim	Mangado Corlim, Nr Govt Primary School, Corlim, Tiswadi, Goa
	GPSGawant - corlim	Calvaddo Corlim, Nr Village Panchayat, Corlim, Tiswadi, Goa
	GPSGaulibhat corlim	Narva St. Mathias Nr Govt Primary School, Tiswadi, Goa
		Malar St. Mathias, Nr Village Panchayat, Tiswadi, Goa
		Gudiwada Neura, Nr Primary School, Tiswadi, Goa
		Dhaktebhat Mandur, Nr Shantadurga Temple, Tiswadi, Goa
		FCW Mandur, Nr Galibaba Temple, Tiswadi, Goa

		Thorlebhat Mandur, Nr Govt School, Tiswadi, Goa
		Miryabhat Mandur, Nr Ganpati Temple, Tiswadi, Goa
		Azossim Mandur, Nr Vodakode, Tiswadi, Goa
		Khalpora Carambolim, Khalpora, Tiswadi, Goa
		Saklebhat Carambolim Nr Village Panchayat, Tiswadi, Goa
		Parkebhat Carambolim, Nr Krishna Temple, Tiswadi, Goa
		Pether Carambolim, Communidade House, near Church,Tiswadi, Goa

School Complex 6:- Chodan/ Diwar/ St. Estev

Dayanad Chodan	GPS Devgi Chodan	Pandav wada Chodan, Dr. Mahale Institute, Tiswadi, Goa
Barthalomews	GPS Akhada/GPS St. Estevam tonca	Kharabhat Chodan, Nr Govt Primary School, Tiswadi, Goa
St. Aloysis	GPS Khadapwad Cumbharjua	Devgi Chodan Nr Deugi, Tiswadi, Goa
Our Lady of Diwar		Vottan Chodan, Chorao, Tiswadi, Goa
St. tereza St Estev		Tonc - I St. Estevam, Nr Health Centre, Tiswadi, Goa
Saraswati Juve		Tonc -I I St. Estevam, Nr Temple, Tiswadi, Goa
GHS Cumbharjua		Akhada St.Estevam, Nr Govt Primary School, Tiswadi, Goa
		Amcy wada St. Estevam, Amcy wada, Tiswadi, Goa
		Golwada Kumbharjua, Nr Govt School, Tiswadi, Goa
		Saibawada Diwar, Nr Post Office, Divar, Tiswadi, Goa
		Lokhanwada Diwar, Tiswadi, Goa
		FCW KumbharjuaNr Govt., School, Tiswadi, Goa
		Talapwada Kumbharjua, Nr Rama Temple, Tiswadi, Goa
		Surchem bhat Kumbharjua, Nr Maruti Temple, Tiswadi, Goa
		Gawant - I Kumbharjua, Nr Village Panchayat, Tiswadi, Goa

Gawant - II Kumbharjua, Nr Govt School, Tiswadi, Goa

School Complex 7 :- Pillar/ Goa Velha/ Neura

Fr. Agnel pilar	GPS Ga velha/ Gps Dando Pillar	Dando Goa Velha, Nr Ganapati Temple, Tiswadi, Goa
Popular	GPS Sulabhat Agacaim	Mascarenhas Goa Velha, Nr Doctor Jesus Clinic, Tiswadi, Goa
St. Adrew	GPS Gawali Moula	Zuari Goa Velha, Nr Bakery, Tiswadi, Goa
Immaculate Heart	GPS Dando Pillas / GPS Goa Velha	Casa Do Pova Goa Velha, Casa Do Pova Hall, Tiswadi, Goa
St. Lawrence	GPS Gawali Moula	Saleri Goa Velha, Nr Chapel, Tiswadi, Goa
Azmane		St. Antonwada Pillar, Tiswadi, Goa
Dayanad Arya		Mercurim Agassaim, In Chapel, Tiswadi, Goa
		Padribhat Agassaim, Behind Police Station, Tiswadi, Goa
		Sulabhat Agassaim, Tiswadi, Goa
		Moula Batim, Tiswadi, Goa
		Village Panchayat Batim, In Village Panchayat,Tiswadi, Goa
		Dhakte Neura, Nr Sateri Temple, Tiswadi, Goa
		Panvel Ribandar Fondvem, Tiswadi, Goa

अनीता करवल, भा.प्र.से
सचिव

Anita Karwal, IAS
Secretary

सत्यमेव जयते

स्कूल शिक्षा और साक्षरता विभाग
शिक्षा मंत्रालय
भारत सरकार
Department of School Education & Literacy
Ministry of Education
Government of India

D. O No. 18-23/2020-IS.15

Dated 10th September, 2020

Dear all,

As you are aware that National Education Policy 2020(NEP: 2020) has been approved by the Union Cabinet on 29th July, 2020. The National Education Policy, 2020 is the first education policy of the 21st century, which aims to address the many growing developmental imperatives of our country and is aligned to the 2030 Agenda for Sustainable Development.

2. To achieve the goals and objectives of NEP 2020, DoSEL has prepared an indicative and draft implementation plan linking each recommendation of NEP with tasks, responsible agencies to carry out the task, timelines and outputs. The major focus of this draft implementation plan is to define activities in such a manner that cohesive implementation and joint monitoring can be done by the centre and states.

3. The task list prepared on the NEP recommendations may be accessed at Googletracker, the link of the tracker is given below: https://docs.google.com/spreadsheets/d/1Qd4tIhEn4VPjkf7jkqesu39GIwQFjlD0DMkcIA1fh7k/edit#gid=1898276744

4. The NEP chapters and their related tasks have been divided into six groups based on their linkages with each other; therefore the task numbers may not appear in continuation. The detailed instructions for using the above tracker are enclosed and in case of any query/facilitation regarding the tasks or tracker, you may contact Ms.Rashi Sharma, Director at rashi.edu@nic.in or Ms.Bharti Sharma at bhartish.tsg@gmail.com (Mob. 9560530982)respectively.

5. It is therefore requested to go through this very carefully and give your suggestions/feedbackby 25th September 2020. This will help in preparing an implementable action plan connecting policy with ground level realities. It is also requested to nominate a nodal officer preferably a SPD/Director, SCERT/Joint Director (Academics) for providing feedback/suggestions on tracker.

6. This draft task list/ implementation plan takes care of the spirit and intent of the Policy and is proposed to be implemented in a phased manner. Attempt has been made to propose activities in a manner, such that it will be built upon the existing structure rather than creating new structures. This draft Plan proposes to prioritise strengthening of what already exists.

7. Further, in order to ensure effective and efficient implementation of NEP 2020, Department of School Education and Literacy (DoSE&L) will set up theme-wise

124 'सी' विंग, शास्त्री भवन, नई दिल्ली–110001
124 'C' Wing, Shastri Bhawan, New Delhi-110001
Telephone: +91-11-23382587, +91-11-23381104 Fax : +91-11-23387589
E-mail: secy.sel@nic.in

implementation committees. States/UTs may also set-up similar subject-wise implementation committees of experts, both to fine-tune implementation plans developed by them in accordance and in sync with this Implementation Plan and to ensure implementation of the Policy as per the principles laid down in NEP 2020. It is also requested to prepare similar task list/ implementation plan for your State/UT/Autonomous bodies for implementation of NEP 2020.

8. Appropriate care is being taken to make this plan realistic, flexible and collaborative by inviting suggestions from all corners of the society. It is hoped that this implementation plan so finalised with the inputs of all associates will be able to translate the vision of the policy in the field and will reach to grass root level creating adequate awareness and motivation and competencies among concerned stakeholders, thereby transforming the school education in the country.

I request your personal attention in this humongous task to initiate the process for implementation of NEP 2020 and ensure timely submission of feedback/suggestions from your State/UT/Autonomous bodies.

Best wishes

Yours Sincerely,

Anita Karwal

(Anita Karwal)

To,

1. Secretary/Pr. Secretary Education of all States/UTs
2. Chairperson CBSE and NCTE
3. Director, NCERT
4. Vice Chancellor, NIEPA
5. Commissioner KVS and NVS

Copy to: All Bureau Heads of Department of SE & L

Instructions for accessing "NEP TASK's FEEDBACK" Tracker, 2020

1. User must have Gmail account.
2. Send the request on"taskfeedback.mhrd@gmail.com" for having access to Google tracker and drive, specifying the State/UT for which access is required.
3. Access will be provided to **One** User ID (Gmail id) per State /UT from which the data would get uploaded on **NEP TASK's FEEDBACK tracker.**
4. Tracker has been grouped in 6 groups as per NEP Chapters (Group 1, Group 2, Group 3, Group 4, Group 5 and Group 6).
5. User will only be able to access the column with respect to their State/UT.
6. After getting the permission for accessing the tracker,
    a) User can simply login into their registered Gmail account,
    b) Copy the available link of tracker and paste in browser (Google chrome) ,
    c) NEP TASK's FEEDBACK - Tracker will get open,
    d) Click on your State/UT specific column, update the information for each task as mentioned in tracker.
    e) The information will be auto saved.
    f) **User** can alsoclick on **"LINK"** available in the tracker; it will redirect /navigate the user in to pre specified folder available on goggle drive. Here, user can add or upload the additional document or information if required.
7. Do not edit, modify or delete the pre-defined format for tracker.
8. Do not edit, modify or delete the folders available on goggle drive
9. For any help or query write onto "taskfeedback.mhrd@gmail.com"

Tracker Link :-

https://docs.google.com/spreadsheets/d/1Qd4tIhEn4VPjkf7jkqesu39GIwQFjlD0DMkcIA1fh7k/edit?usp=sharing

NOTE:- Kindly share the details of NODAL OFICER (Name, Designation ,Contact number and Email ID) for giving the access to the tracker.

LAQ001A **Annexure III**

Review of Action taken on the following as part of the NEP implementation in Goa

All of the following activities are already being implemented or in progress

1	Learner centric Education: Multidisciplinary Education. As part of the NEP 2020, multidisciplinary education is offered at first year UG level.
2	Learner centric Education: Adoption of Academic Bank of Credits (ABC). Goa University being the only State University, has already registered on the ABC portal. Registration of students on ABC portal from all college in Goa is in progress
3	Learner centric Education: The Multiple Entry and Exit option at UG level has been adopted into the Ordinance of Goa University.
4	Learner centric Education: National Curriculum Framework for higher education (NCrF) levels is adopted as per NEP 2020.
5	Digital Learning: ODL and Online Programmes Development of MOOCS Courses for SWAYAM is in progress. Two MOOC courses (Analytical Chemistry and Music) are already submitted to the Centre for Educational Communication (CEC, New Delhi). Recording of the third MOOC course in Geology is completed.
6	Digital Learning: Digital Nodal Centers: Number of HEIs acting as digital nodal centres delivering digital education such as SWAYAM and other MOOCs. In Goa, we have established 2 SWAYAM nodal centres, one each in North Goa and South Goa.
7	Industry-Institute Collaboration: Internship/Apprenticeship Embedded Degree Programme Centralized Training, Internship & Placement Cell has been established at the Directorate of Higher Education. Already, centralized and coordinated placement drives are being held at various colleges.
8	Industry-Institute Collaboration: signing of MoUs signed with Industry for internship/ research/ entrepreneurship/ employment 10 MoUs have already been signed with several industries and institutions for training/placement.
9	Establishment of Research and Development Cells In Goa, all HEIs have established R&D Cells to enhance research at Undergraduate level.
10	Establishment of Teaching, Learning & Educational Technology Cells All HEIs have established Teaching, Learning & Educational Technology Cells to facilitate implementation of the most effective teaching pedagogies and technologies to enhance education in the State.
11	Academic research and internationalisation: Already a few HEIs have established academic and research collaboration with foreign HEIs.

12	Ranking Excellence (participation of HEIs in the ranking): About 50% of the HEIs are already participating in the ranking/accreditation. Handholding of non-accredited HEIs is in progress, in association with NAAC Office, Govt. of India.
13	Development of Institutional Development Plans (IDP) 100% of HEIs in general education have developed their IDPs. All HEIs in Goa are now directed to develop IDPs.
14	Indian Knowledge System: Courses in Indian Languages Through DISHTAVO project, all the academic content at UG level is being recorded in Konkani. About 25% of the content is complete.

Annexure IV

Sr. No	Name	Committee Position
1.	Shri.Bhaskar Nayak	Member
2.	Shri.Shripad K. Patnekar	Member
3.	Mr.Shirishkumar Amshekar	Member
4.	Mrs.Milan/Sunit Dessai	Member
5.	Mrs.Savita Tawadkar	Member
6.	Ms.Lona Dasilva	Member
7.	Mr.Anil Samant	Member
8.	Fr Pedro Rodriguez	Member
9.	Shri.Jose Rebelo	Member
10.	Mr.Arun Sakardande	Member
11.	Rev.Fr.Zeferino D`Souza	Member
12.	Mr.Subhash Desai	Member
13.	Mr.Mariano Vaddaries	Member
14.	Mr.Oscar Gonsalves	Member
15.	Shri.Jervi Assumpteon Pereira	Member
16.	Shri.Bhagirath Shetye	Member
17.	Dr.Nandakumar Kamat	Member
18.	Dr.D.B Arolkar	Member
19.	Dr. Sadanand Hinde	Member
20.	Dr. Elvis Gonsalves	Member
21.	Shri. Damodar Panchwadkar	Member
22.	Shri. Vilas Satarkar	Member
23.	Mr. Olimpia Gonsalves	Member
24.	Mr. Madhav Kharvi	Member
25.	Mrs. Poornima Rajendra Kerkar	Member
26.	Dr. Allan Abreau	Member
27.	Shri. Shripad K. Patnekar	Member
28.	Dr. Sanjay Desai	Member
29.	Mr. Vilas Satarkar	Member
30.	Mr. Dattatraya Nayak	Member
31.	Fr. Allen Noronha	Member
32.	Dr. Nandakumar Kamat	Member

Annexure V

Sr. No	Name	Committee Position
1	Mr. Anil Samant	Chairman
2	Mr. Shripad Patnekar	Member
3	Mr. Vilas Satarkar	Member
4	Ms. Savita Tawadkar	Member
5	Ms. Poornima R. Kerkar	Member
6	Ms. Sunita alias Milan Desai	Member
7	Ms. Trupti Banulikar	Member
8	Ms. Lona Da silva	Member
9	Fr. Pedro Rodrigues SJ	Member
10	Mr. Shirishkumar Amshekar,	Member

87/C
68/C

Government of Goa,
DIRECTORATE OF HIGHER EDUCATION
SCERT, Alto- Porvorim-Goa PIN 403 521
Tel: 2415585/2410824 Email: dir-dhe.goa@nic.in
No.**ACAD-II/New Education Policy: HE/80/DHE/2020/3446** Dated: **25/09/2020**

Read: Order No. ACAD-II/New Education Policy: HE/80/DHE/2020/2941 dated 04/09/2020

ORDER

Government is pleased to constitute the following Committee to examine the 'New Education Policy – 2020' and to prepare the Policy and roadmap for the State of Goa at Higher Education level.

1. Shri Laxmikant Parsekar ... Chairman
   Former Hon'ble Chief Minister of Goa
2. Secretary (Education) ... Member
3. Prof. Varun Sahni, ... Member
   Vice-Chancellor,
   Goa University, Taleigao - Goa
4. Dr. Satish Shetye ... Member
   Former Vice-Chancellor,
   Goa University, Taleigao - Goa
5. Director of IIT ... Member
6. Director of NIT ... Member
7. Dr. Ajit Parulekar, ... Member
   Director, GIM
8. Director of Technical Education ... Member
9. Dr. Prasad Naik, ... Member
   Former Faculty,
   BARC, Mumbai

8ck
67/c

10. Dr. Erwin D'Sa,
Former Professor,
Goa University, Taleigao - Goa ... Member

11. Dr. Sarvesh Sawant,
Director,
R & D, TEWA ... Member

12. Dr. P. R. Pednekar,
Ex-Director,
Syngenta Bio Ltd. ... Member

13. Dr. Jayant Umarye,
Head of Agro R & D Godrej ... Member

14. Dr. M. K. Janarthanam,
Professor, Goa University,
Taleigao - Goa ... Member

15. Dr. Pranab Mukhopadhyay,
Professor, Goa University,
Taleigao - Goa ... Member

16. Dr. Kripashankara M. S.
Principal, Goa College of Engineering,
Farmagudi - Goa ... Member

17. Dr. Wiseman Pinto,
Professor Pathology, Goa Medical College,
Bambolim - Goa ... Member

18. Dr. V. N. Jindal,
Former Dean, Goa Medical College,
Bambolim - Goa ... Member

19. Prof. Madhav. S. Kamat,
Former Principal,
Murgaon Education Society's College
of Arts & Commerce, Zuarinagar - Goa. ... Member

20. Dr. Ramesh V. Gaonkar
Former Principal,
Parvatibai Chowgule College of Arts
& Science, Margao – Goa. ... Member

85/C
66

21. Dr. Anil S. Dinge ... Member
Former Principal, P.E.S's R.S.N's College
of Arts & Science,
Farmagudi – Goa.

22. Dr. Murari Tapaswi, ... Member
Former Chief Scientist(Library),
N.I.O. - Dona Paula, Goa

23. Fr. Walter de Sa ... Member
Former Principal,
St. Xavier's College of Arts, Science
& Commerce, Mapusa- Goa

24. Dr. Radhika Nayak ... Member
Chairperson, College Development Council
Goa University, Taleigao - Goa

25. Vaidya Upendra Dikshit ... Member
Faculty Member,
Kamaxidevi Homeopathic Medical College,
Shiroda - Goa

26. Dr. Aparna Patil ... Member
Faculty Member & Sanskrit Expert

27. Dr. Bhushan Bhave ... Member
Professor, P.E.S's R.S.N's College
of Arts & Science,
Farmagudi – Goa.

28. Mr. Sudesh N. Gaude ... Member
Assistant Professor,
Institute of Psychiatry and
Human Behaviour, Bambolim- Goa

29. Mr. Datta B. Naik ... Member
Retired Professor & Academician

30. Dr. Suresh Kunkalekar, ... Member
Principal, Don Bosco College
of Agriculture, Sulcorna,
Quepem – Goa

31. Dr. Vikas Pissurlekar, ... Member
Principal, P.E.S's R.S.N's College
of Arts & Science, Farmagudi - Goa

32. Dr. Sanjay Desai, ... Member
Principal, Cuncolim Education Society's
College of Arts & Commerce,
Cuncolim - Goa

33. Dr. Rajan Mathew, ... Member
Director of Physical Education,
Government College of Arts, Science
& Commerce – Quepem, Goa

34. Director of Higher Education ... Member Secretary

This Order supersedes the earlier order read in the preamble.

By order and in the name of
the Governor of Goa

(**Tushar Halarnkar**)
Under Secretary (Higher Education)

Copy to:

1. The Director of Printing & Stationary, Panaji – Goa with a request to publish the same in Government Official Gazette.
2. All the concerned Members
3. P.A to Director (HE)
4. Office Copy
5. Guard File.

Detailed Roadmap for the Implementation of National Education Policy – 2020 in Higher Education for the State of Goa

Educational Technology, Open Distance Learning and Learning Platform

Sub-Committee

1. Prof. Gopal Mugeraya, Chairperson
2. Prof. M. K. Janarthanam, Convenor
3. Prof. Erwin Desa, Member
4. Prof. Sanjay S. Desai, Member
5. Dr. Bhushan Bhave, Member
6. Dr. Aparna Patil, Member

25th November, 2020

1. Objectives

To submit detailed roadmap for the implementation of the National Education Policy 2020 at the Higher Education level for the state of Goa w.r.t. Educational Technology, ODL and Learning Platforms. The following are the broad terms of reference:

1) To explore the possibility of Open Distance Learning (ODL) in the State
2) Possibilities of creating Adult Education Centers in HEIs
3) Creating State Educational Technology Forum in line with National Education Technology forum (NETF)
4) Possibilities of exploring and implementing the power of AI in higher education
5) Ways to reduce the digital divide in the campuses for ensuring equity and inclusive higher education
6) Encouraging faculty to develop courses under MOOCs
7) Online assessment and examination
8) Incentive for teachers integrating technology in teaching – through Awards and recognition
9) Possibilities of establishing Virtual Labs through CRS funding
10) Strengthening content creation, digital repository and dissemination
11) Ensuring digital infrastructure for both teachers and learners
12) Conducting pre-requisite courses to supplement the digital education.

2. Educational Technology

Educational Technology is application of scientific method and technique to Education – B. P. Lulla

Educational Technology is an application of scientific process to practical solutions – Bloomer

India is a global leader in information and communication technology and in other cutting-edge domains, such as space. The Digital India Campaign is helping to transform the entire nation into a digitally empowered society and knowledge economy. While education will play a critical role in this transformation, technology itself will play an important role in the improvement of educational processes and outcomes; thus, the relationship between technology and education at all levels is bidirectional.

Technology in education is a journey and not a destination and capacity will be needed to orchestrate the various ecosystem players to implement policy objectives. A dedicated unit for the purpose of orchestrating the building of digital infrastructure, digital content and capacity building need to be created in the State to look after the e-education needs of higher education. Since technology is rapidly evolving, and needs specialists to deliver high quality e-learning, a vibrant ecosystem has to be encouraged to create solutions for keeping with the rapid pace of technological developments.

New technologies involving artificial intelligence, machine learning, block chains, smart boards, handheld computing devices, adaptive computer testing, and other forms of educational software and hardware will not just change what students learn in the classroom but also how they learn. Thus, these areas and beyond will require extensive research both on the technological as well as educational fronts.

The thrust of technological interventions will be for the purposes of improving teaching, learning and evaluation processes, supporting teacher preparation and professional development, enhancing educational access, and streamlining educational planning, management, and administration including processes related to admissions, attendance, assessments, etc.

For carrying out Pilot studies for online education, appropriate agencies, such as the NETF, CIET, NIOS, IGNOU, IITs, NITs, Goa University, etc. will be identified to conduct a series of pilot studies, in parallel, to evaluate the benefits of integrating education with online education while mitigating the downsides and also to study related areas, such as, student device addiction, most preferred formats of e-content, etc. The results of these pilot studies will be publicly communicated and used for continuous improvement. The upcoming sections elaborate on the various terms of reference to be addressed by this committee.

3. Open Distance Learning

3.1. Introduction

NEP-2020 (*Ref: Point 10.10)* discusses that Institutions will have the option to run Open Distance Learning (ODL) and online programmes, provided they are accredited to do so, in order to enhance their offerings, improve access, increase Gross Enrollment Ratio (GER), and provide opportunities for lifelong learning towards achieving Sustainable Development Goal 4 (SDG 4). All ODL programmes and their components leading to any diploma or degree will be of standards and quality equivalent to the highest quality programmes run by the Higher Educational Institutions (HEIs) on their campuses. Top institutions accredited for ODL will be encouraged and supported to develop high-quality online courses. Such quality online courses will be suitably integrated into curricula of HEIs, and blended mode will be preferred. Courses also need to be made to cater to *Divyang* students.

3.2. Present Status and Roadmap for Goa

Goa University (GU) initiated distance education efforts through Distance Education, Information and Training Infrastructure (DEITI) programme. It was a live video-audio interactive facility, using Satellite Technology, Internet and Telecom network, with financial assistance provided by the Govt. of India, and support of the ISRO. Now Goa University has revamped DEITI into a more inclusive Directorate of Digital Learning and Initiatives with the aim of not only planning, creating and delivering the digital content but also to integrate all the related processes for a meaningful learning process and experience. While recording for SWAYAM courses as per the specified

standards, it is also assisting Directorate of Higher Education (DHE), Government of Goa in recording and editing the video lectures.

Roadmap:

1. The existing facilities of DDLI may be reviewed, enhanced and strengthened.
2. Further, possibility of other academic institutions offering higher education to carry out Open Distance Learning may be explored
3. Industry relevant academic courses may be introduced further to careful evaluation and feasibility of operation.
4. Interested faculty from now affiliated institutions may also be given a chance to contribute and participate in ODL programmes.
5. HEI are to conduct courses in cutting-edge domains and assessing their impact on specific areas such as professional education.
6. Courses catering to Divyang students also need to be made.
7. Video hosting facilities linked to Learning Management System (LMS) for structured learning to be established.

4. Adult education centers in HEIs

4.1. Introduction

NEP-2020 (*Ref: Point 21*) discusses about the importance of Adult Education and Lifelong Learning. The opportunity to attain foundational literacy, obtain an education, and pursue a livelihood must be viewed as basic rights of every citizen. Literacy and basic education open up whole new worlds of personal, civic, economic, and lifelong-learning opportunities for individuals that enable them to progress personally and professionally. They offer innumerable advantages Ex: while carrying out financial transactions; to compare the quality/quantity of goods purchased against the price charged; to fill out forms to apply for jobs, loans, services, etc.; to comprehend public circulars and articles in the news media; to use conventional and electronic mail to communicate and conduct business; to make use of the internet and other technology to improve one's life and profession; to comprehend directions and safety directives on the street, on medicines, etc.; help children with their education; be aware of one's basic rights, Law and responsibilities as a citizen of India; appreciate works of literature; and pursue employment in medium or high-productivity sectors that require literacy. Volunteerism and community involvement particularly by HEIs shall play a major role in achieving National Literacy Mission of *100%* literacy.

4.2. Present Status and Roadmap for Goa

In the state of Goa, Literacy rate among population aged 7 years and above is close to 90%, and its growing at an average annual rate of 5.55%. Hence, Goa is surely is a very good place w.r.t. adult education, however, we need to reach 100% literacy rate. Also, the scope of Adult education may be expanded beyond basic literacy and the road map for doing so is as follows.

Roadmap:

1. Identify the HEIs where Adult Education Centres (AECs) may be set-up
2. An adult education curriculum taking support from constituent body of State education department and NCERT in the areas of literacy, numeracy, basic education, vocational skills, and beyond need to be formulated.
3. Focus shall be on the following areas:
   a. foundational literacy and numeracy/ digital literacy focusing on life skills for day to day activities;
   b. critical life skills (including financial literacy, digital literacy, commercial skills, health care and awareness, child care and education, and family welfare);
   c. vocational skills development (with a view towards obtaining local employment);
   d. basic education (including preparatory, middle, and secondary stage equivalency); and
   e. continuing education (including engaging holistic adult education courses in arts, sciences, technology, culture, sports, and recreation, as well as other topics of interest or use to local learners, such as more advanced material on critical life skills).
4. Suitable teaching-learning methods to cater to Adult population are to be incorporated.
5. Community involvement and smooth & beneficial integration of technology is to be facilitated
6. Role of HEIs shall majorly be in ICT and other Vocational Skill based education, as they normally have required infrastructure in place
7. Teaching in Konkani language wherever possible may be encouraged.
8. HEIs need to work with NGOs/Social Workers/ Counsellors and other community organizations to enhance efforts towards literacy and adult education.
9. As the adult education is basically for self-enrichment, no pre-requisite shall be required though screening could be there.

5. Creation of State Education Technology Forum in line with National Education Technology Forum

5.1. Introduction

NEP-2020 (*Ref: Point 23.3*) discusses about the use and integration of technology to improve multiple aspects of education, provided these interventions are rigorously and transparently evaluated in relevant contexts before they are scaled up. An autonomous body, the National Educational Technology Forum (NETF), will be created to provide a platform for the free exchange of ideas on the use of technology to enhance learning, assessment, planning, administration, and so on, both for school and higher education. The aim of NETF will be to facilitate decision making on the induction, deployment, and use of technology, by providing to the leadership of education institutions, State and Central governments, and other stakeholders, the latest knowledge and research as well as the opportunity to consult and share best practices.

To remain relevant in the fast-changing field of educational technology, the NETF will maintain a regular inflow of authentic data from multiple sources including educational technology

innovators and practitioners and will engage with a diverse set of researchers to analyze the data. To support the development of a vibrant body of knowledge and practice, the NETF will organize multiple regional and national conferences, workshops, etc. to solicit inputs from national and international educational technology researchers, entrepreneurs, and practitioners.

5.2. Roadmap for Goa

1. Firstly, State Education Technology Forum (SETF) is to be formed, and its functions shall be in line with that of NETF, as listed below.
   a) provide independent evidence-based advice to State Government 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.
2. To identify the emergent technologies based on their potential and estimated timeframe for implementation, so that associated research may be initiated
3. SETF shall have the data repository of technology innovators and practitioners
4. It shall be a vibrant body organizing many events like conferences, workshops, webinars, on the latest technological developments and advancements in various fronts.

6. Possibilities of Artificial Intelligence in Higher Education

6.1. Introduction

NEP-2020 (*Ref: Point 23.8-23. 13*) discusses about the disruptive technology - Artificial Intelligence (AI) 3D/7D Virtual Reality. As the cost of AI-based prediction falls, AI will be able to match or outperform and, therefore, be a valuable aid to even skilled professionals such as doctors in certain predictive tasks. AI's disruptive potential in the workplace is clear, and the education system must be poised to respond quickly. One of the permanent tasks of the NETF will be to categorize emergent technologies based on their potential and estimated timeframe for disruption, and to periodically present this analysis to MHRD (Now, MOE). Based on these inputs, MHRD will formally identify those technologies whose emergence demands responses from the education system.

In the context of AI, National Research Foundation (NRF) may consider a three-pronged approach:

(a) advancing core AI research,
(b) developing and deploying application-based research, and
(c) advancing international research efforts to address global challenges in areas such as healthcare, agriculture, and climate change using AI.

HEIs will play an active role not only in conducting research on disruptive technologies but also in creating initial versions of instructional materials and courses including online courses in cutting-

edge domains and assessing their impact on specific areas such as professional education. Once the technology has attained a level of maturity, HEIs with thousands of students will be ideally placed to scale these teaching and skilling efforts, which will include targeted training for job readiness. Disruptive technologies will make certain jobs redundant, and hence approaches to skilling and deskilling that are both efficient and ensure quality will be of increasing importance to create and sustain employment. Institutions will have autonomy to approve institutional and noninstitutional partners to deliver such training, which will be integrated with skills and higher education frameworks.

6.2. Roadmap for Goa

1. AI assited teaching and learning. Each course at Diploma, undergraduate and postgraduate level is to be carefully scrutinized by the relevant Board of Studies with the intention of recommending the purchase/development of interactive 3D virtual models of biological, chemical, physical entities, machines and mathematical functions. The purpose of having such interactive models is to substantially improve the efficiency and effectiveness of the teaching-learning experience.
2. Course on Fundamentals of AI shall be made compulsory
3. Applied AI course shall be mandatory for UG programmes.
4. AI should be used extensively in suggesting courses based on the job market or requirements, student specific prescriptions and suggestions based on AI, and funding, fellowship, scholarship and research opportunities.
5. HEIs to offer Ph.D. and Masters programmes in core areas such as Machine Learning as well as multidisciplinary fields “AI + X” and professional areas like health care, agriculture, and law.
6. They may also develop and disseminate online courses effectively via platforms such as SWAYAM. ***AI*** tools allows the Instructor to understand how much did the student follow the content, which are the topics in which learning was slow, in taking instant feedback, gamification of learning, etc.
7. AI tools to be developed for *Online proctoring of the Student* while carrying out Onlineexaminations, which has become the need for the hour in view of Pandemic.
8. They may blend these online courses with traditional teaching in undergraduate and vocational programmes.
9. HEIs may also offer targeted training in low expertise tasks for supporting the AI value chain such as data annotation, image classification, speech transcription, etc.
10. As some of these AI technologies may create jobs redundancy, training for skilling and deskilling needs to be done to create and sustain employment.
11. Provide Server infrastructure for storing the data, which is the key fuel for AI-based technologies
12. To ensure that network and data security are intact and this data should not be hacked or corrupted.
13. Applications relating to clean and renewable energy, water conservation, sustainable farming, environmental preservation, and other green initiatives; are to be prioritized

14. AI assisted Goa specific features related to Tourism, hotels, finance, etc.

Examples of few AI Tools used on daily basis: - Chatbots in smart retails, 24/7 Online intelligent assistance within almost all software applications.

7. Reduce digital divide in Campuses for ensuring equity and inclusive higher Education

7.1. Introduction

NEP-2020 (*Ref: Point 14 and 24.2*) discuss that the benefits of online/digital education cannot be leveraged unless the digital divide is eliminated through concerted efforts, such as the Digital India campaign and the availability of affordable computing devices. It is important that the use of technology for online and digital education adequately addresses concerns of equity.

Given the fact that there still persists a substantial section of the population whose digital access is highly limited, the existing mass media, such as television, radio, and community radio will be extensively used for telecast and broadcasts. Such educational programmes shall be made available 24/7 in different languages to cater to the varying needs of the student population. A special focus on content in all Indian languages will be emphasized and required; digital content will need to reach the teachers and students in their medium of instruction as far as possible.

To facilitate learning for all students, with special emphasis on Socio-Economically Disadvantaged Groups (SEDGs), the scope of education is broadened to facilitate multiple pathways to learning involving both formal and non-formal education modes.

7.2. Roadmap for Goa

Steps to be taken by Government

1. Government should speed-up and strengthen digital network facilities till the last mile.
2. Allocate funds for carrying out research on cost effective Smart devices using which digital education can be carried out.
3. Earmark suitable Government funds for the education of SEDGs
4. Set clear targets for higher Gross Enrollment Ratio for SEDGs
5. Enhance gender balance in admissions to HEIs
6. Enhance access by establishing more high-quality HEIs in aspirational districts and Special Education Zones containing larger numbers of SEDGs
7. Develop and support high-quality HEIs that teach in Konkani/Hindi languages or bilingually
8. Provide more financial assistance and scholarships to SEDGs in both public and private HEIs
9. Conduct outreach programmes on higher education opportunities and scholarships among SEDGs
10. Develop and support inclusive technology tools for better participation and learning outcomes.

Steps to be taken by all HEIs

1. Carry out research in making cost effective Smart devices using which digital education can be carried out. Ex: AKASH tablet developed by IIT Bombay costing less that Rs 3000.
2. Mitigate opportunity costs and fees for pursuing higher education
3. Provide more financial assistance and scholarships to socio-economically disadvantaged students
4. Conduct outreach on higher education opportunities and scholarships
5. Make admissions processes more inclusive
6. Make curriculum more inclusive and relevant.
7. Increase employability potential of higher education programmes
8. Develop more degree courses taught in Indian languages and bilingually
9. Ensure all buildings and facilities are wheelchair-accessible and disabled-friendly
10. Develop bridge courses for students that come from disadvantaged educational backgrounds
11. Provide socio-emotional and academic support and mentoring for all such students through suitable counselling and mentoring programmes
12. Ensure sensitization of faculty, counsellor, and students on gender-identity issue and its inclusion in all aspects of the HEI, including curricula
13. Strictly enforce all no-discrimination and anti-harassment rules
14. Develop Institutional Development Plans that contain specific plans for action on increasing participation from SEDGs, including but not limited to the above items.
15. Institutes should be there more for hands on practical skill development and for face to face interaction to clarify doubts rather than conducting theory lectures; these lectures should be through ODL/Digital Flipped classrooms)

8. Massive Open Online Courses (MOOCs)

8.1. Introduction

NEP-2020 (*Ref: Point 23.10 and 24*) discusses the role to be played by HEIs not only in conducting research on disruptive technologies but also in creating initial versions of instructional materials and courses including online courses in cutting-edge domains and assessing their impact on specific areas such as professional education.

Indian Institutes have already done huge contribution in providing free-online education under MOOCs SWAYAM platforms like NPTEL in Higher Education. Efforts are in place for offering courses not only in English but also in regional languages. However, under NEP-2020, e-learning platforms such as SWAYAM, will be extended to provide teachers with a structured, user-friendly, feedbackdriven, rich set of assistive tools for monitoring progress of learners. Tools, such as, two-

way video and two way-audio interfaces for holding online classes, are a real necessity as the present pandemic has shown.

While promoting digital learning and education, the importance of face-to-face in-person learning is fully recognized. Accordingly, different effective models of blended learning will be identified for appropriate replication for different subjects.

8.2. Present Status and Roadmap for Goa

Under Goa University the Directorate of Digital Learning and Initiatives (DDLI) has been established, to look into various aspects of Digital education.
Some of its experiences include:

1. Produced a 40 hrs content for **Annual Refresher Programme in Teaching (**ARPIT) MOOCs in Marine Science. This 4-credit course is hosted on SWAYAM platform and course was held from 26th November 2018 to 28th February 2019.

2. DDLI also supported in conducting online **'Basic Course in Meditation for Well-being'** organised by Drepung Losel Ling Meditation and Science Center, Mongod. 1069 participants registered for this course.

3. A 5 hours digital content on **Electoral Literacy** has been produced for Election Commission of India (Goa state).

4. Two Short-Term Course (STC) on **Workshop on MOOCS, e-content development and Open educational Resources** was conducted in association with HRDC, Goa University (March 2019). A two-day workshop on MOOCs (October 2019) was also organized in association with Directorate of Higher Education,Goa & IIT, Mumbai. 50 teachers from various colleges in Goa participated in this workshop.

5. Due to COVID pandemic, University and colleges were shut down and regular teaching was halted. Online mode was only option available by which teacher could reach to the learner. DDLI took opportunity through a DHE initiative to train the teachers across state of Goa to generate the e-content using various digital multimedia tools. DDLI conducted extensive training programme for the college and University teachers on **Open Broadcaster Software**. 350 college teachers were trained at DHE, whereas around 100 faculty members (6 batches) were trained by DDLI on campus (June – August 2020).
6. DDLI also extended the studio facilities including recording and editing in producing e-content project **'DISHTAVO'** by DHE.
7. **'Kaleidoscope Quiz'** – Produced for Communicare Trust for eight successive years in a row. (2010- 2017)

8. 3 months **'IIRS outreach programme in GIS, GPS & Remote Sensing'** – LIVE from Dehradun for university Earths Science Students on AVIEW platform (2015-2019)

9. The Directorate also provided services towards LIVE webcasting of events like talk by H.H. the Dalai Lama, Musical concert by Prof. Santiago Lucardi Girelli under VRPP, University convocation, etc.

10. DDLI is also active in recording lectures of faculty members.

11. Has been coordinating Digital Transition Committee constituted by the University for online teaching/learning and online conduct of examinations in evaluating and identifying suitable software.

Roadmap:

1. The system of Education needs to move from 'One-size-fits-all' model to 'Self-paced learning' paradigm.
2. Teachers require suitable pedagogy to be effective online educators.
3. Flip Classroom model of Teaching in HEIs is to be promoted. This will enable 'Self-paced' learning by the student, as they can pause, repeat the online content till it's understood.
4. To enable the Online lecture allow take continuous feedback on student understanding, allow the student to ask question at a given instant of the video, facilitate chatbots for FAQs, etc using AI tools. AI tools also enable taking Instant feedback, gamification of learning, etc.
5. Class-room interactions should be to discuss the learnings of the student, answer questions raised by the student, do interactive problem solving, for peer-interactions, etc.
6. Few standards need to be set-up by appropriate bodies on content creation, technology, and pedagogy for online/digital teaching-learning. These standards will help to formulate guidelines for e-learning by HEIs.
7. All such software will be available in all major Indian languages and will be accessible to a wide range of users including students in remote areas.
8. A definite road map by each faculty member in Higher education to come out with course(s) for ODL
9. Recording courses inviting outside experts if required for cutting edge / certain skill based courses.
10. Blending on-line theory and demo priming videos to develop practical skills in laboratories and in the field.

9. Online assessment and examinations

9.1. Introduction

NEP-2020 (*Ref: Point 24.3 and 24.4 (h)*) discusses about Online assessment and examinations. Teachers require suitable training and development to be effective online educators. It cannot be assumed that a good teacher in a traditional classroom will automatically be a good teacher in an online classroom. Aside from changes required in pedagogy, online assessments also require a different approach. There are numerous challenges in conducting online examinations at scale, including limitations on the types of questions that can be asked in an online environment, handling network and power disruptions, and preventing unethical practices. Certain types of courses/subjects, such as performing arts and science practical have limitations in the online/digital education space, which can be overcome to a partial extent with innovative measures. Further, unless online education is blended with experimental and activity-based learning, it will tend to become a screen-based education with limited focus on the social, affective and psychomotor dimensions of learning.

Appropriate bodies, such as the proposed National Assessment Centre or PARAKH, NTA, and other identified bodies will design and implement assessment frameworks encompassing design of competencies, portfolio, rubrics, standardized assessments, and assessment analytics. Studies will be undertaken to pilot new ways of assessment using education technologies focusing on 21st century skills.

9.2. Roadmap for Goa

1. Considering the present need that has arisen for carrying out Online proctoring of the students, it is advised to encourage development of AI Powered Auto Proctoring Platforms
2. Such platforms shall be enabled with Face Recognition, Live Proctoring, Automatic Grading, Real-time Result declaration, etc.
3. In case of such platforms being developed by Institutes of National Importance they can be adopted through MoUs.

10. Incentive for teachers integrating technology in teaching

10.1. Introduction

NEP-2020 (*Ref: Point 23.6 and 24.4 (g)*) discuss on how to integrate technology in teaching. It is envisaged that a rich variety of educational software, will be developed and made available for students and teachers at all levels. All such software will be available in all major Indian languages and will be accessible to a wide range of users including students in remote areas and *Divyang* students. Teaching-learning e-content will continue to be developed by all States in all regional languages. Suitable equipment will be made available to teachers at schools so that teachers can suitably integrate e-contents into teaching-learning practices. Technology-based education platforms, such as SWAYAM, will be better integrated in higher education, and will include

ratings/reviews by users, so as to enable content developers create user friendly and qualitative content.

10.2. Roadmap for Goa

1. Provision for Smart Class rooms enabled with Smart boards and recording facilities, or other suitable infrastructure for taking Online classes or record lectures is to be made
2. Rigorous training needs to be conducted for Teachers in learner-centric pedagogy and on how to become high-quality online content creators themselves using online teaching platforms and tools.
3. Emphasis on the teacher's role in facilitating active student engagement with the content and with each other is to be noted.
4. Due credit points are to be allocated for taking up such initiatives. These credit points may be used during professional growth/promotions, etc.
5. Special Awards and recognition made be facilitated to encourage and incentivize such teachers

11. Virtual labs through Corporate Social Responsibility (CSR) funding

11.1. Introduction

NEP-2020 (*Ref: Point 24.4 (f)*) discusses about Virtual Labs. The existing e-learning platforms such as SWAYAM will also be leveraged for creating virtual labs so that all students have equal access to quality practical and hands-on experiment-based learning experiences. The possibility of providing adequate access to Socio-Economically Disadvantaged Group (SEDG) students and teachers through suitable digital devices, such as tablets with pre-loaded content, will be considered and developed.

11.2. Roadmap for Goa

1. HEIs in Goa are to be identified, which can start creating Virtual labs in their respective areas of Expertise and infrastructure availability.
2. Virtual labs created by few of the Institutes of National importance can be taken as reference and such labs may be built with explanation in Konkani, Hindi and English.

12. Strengthen Content creation, digital repository and dissemination

12.1. Introduction

NEP-2020 (*Ref: Point 24.4 (d)*) discusses about Content creation, digital repository and dissemination. A digital repository of content including creation of coursework, Learning Games & Simulations, Augmented Reality and Virtual Reality will be developed, with a clear public system for ratings by users on effectiveness and quality. For fun-based learning student-appropriate tools

like apps, gamification of Indian art and culture, in multiple languages, with clear operating instructions, will also be created. A reliable backup mechanism for disseminating e-content to students will be provided.

12.2. Roadmap for Goa

1. Generation, Dissemination and Assimilation shall be the overall aim towards digital learning
2. All the Digital content that shall be created need to be preserved on a central server.
3. Establishing video server to serve the recorded lectures as Flipped Classroom and linking them to LMS for structured learning following SWAYAM / COURSERA model.
4. Portals need to be created, for easy access by the students
5. Access to these digital repositories after due authorization has to be made and data security has to be ensured.
6. This will enable smooth dissemination of digital content.
7. Continuous and extensive training programme shall be conducted for content creators.
8. Establish cell for creation of E-content in all the disciplines and subjects.
9. Establish translation cell at University level in order to create E-content in all the subjects in the official language of the state.

13. Ensuring digital infrastructure for Teachers and Learners

13.1. Introduction

NEP-2020 (*Ref: Point 24.4 (b)*) discusses about Digital infrastructure that is to be kept ready. There is a need to invest in creation of open, interoperable, evolvable, public digital infrastructure in the education sector that can be used by multiple platforms and point solutions, to solve for India's scale, diversity, complexity and device penetration. This will ensure that the technology-based solutions do not become outdated with the rapid advances in technology.

13.2. Roadmap for Goa

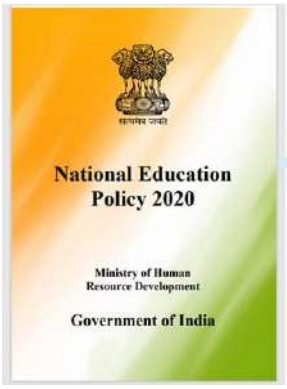
1. Infrastructure like Smart boards or tablets or screen interactive pens, etc. have to be provided to the teachers
2. Socio-Economically Disadvantaged Group (SEDG) students, have to be provided with tablets with pre-loaded content.
3. Due steps for providing required infrastructure for *Divyang* students also need to be facilitated.
4. Digital infrastructure created should be maintained and upgraded frequently for effective digital interaction.
5. Powerful connectivity should be provided for each institution especially in rural areas.

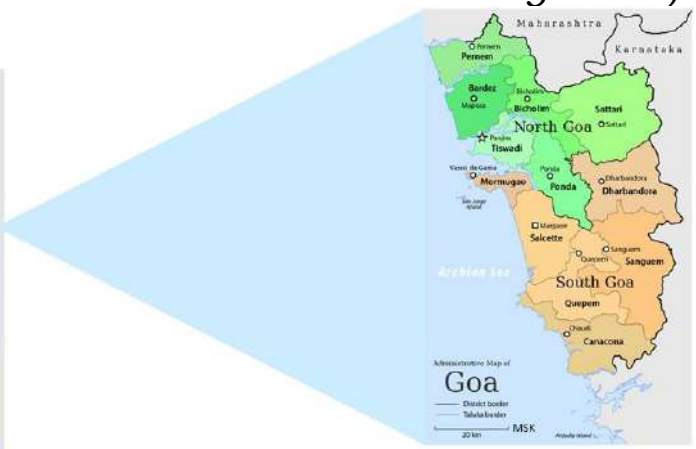
14. References

1. National Education Policy 2020, Ministry of Education (Formerly - Ministry of Human Resource Development), Government of India
2. R. P. Pathak and Jagdeesh Chaudhary, “Educational Technology”, Pearson Publisher
3. S. Y. Shah, A source book on Adult Education, Directorate of Adult education, Govt. of India

POLICY AND ROAD MAP FOR PROFESSIONAL EDUCATION IN GOA

(Based on the National Education Policy 2020)





Prepared & Submitted by

The Committee on Professional Education

Dr. B.K.Mishra

Director, IIT-Goa

Chairman of the Committee

Dr.M.S.Krupashankara

Principal, Goa College of Engineering & Convenor

Members

Dr. R.G.Wiseman Pinto

Dean, Faculty of Medicine, Goa University

Professor & Head, Dept.of Pathology, Goa Medical College

Dr. Suresh Kunkalekar

Principal, Don Bosco College of Agriculture

Dr.Upendra Dixit

Ayurveda Consultant, Former Professor, Ayurveda College

Shri. Sudesh N.Gaude

Assistant Professor, Institute of Psychiatry and Human Behaviour

Dr.Jayant Umarye

Head, Agro R&D Godrej (Mumbai)

Dr.V.N.Jindal

Former Dean, Goa Medical College

Table of Contents		
S.No	**Topic**	**Page No.**
1	Common Recommendations for All Professional Education Programs	2
2	Specific Guidelines and Roadmaps	
a)	Agriculture and Allied Programs	13
b)	Medicine and Health Sciences	16
c)	Technical Education Programs	22

1.0 COMMON RECOMMENDATIONS FOR ALL PROFESSIONAL EDUCATION PROGRAMS

The vision of the Goa specific road map for professional education is based on the core principle of the National Education Policy 2020 (NEP-2020), which is:

"The purpose of the education system is to develop good human beings capable of rational thought and action, possessing compassion and empathy, courage and resilience, scientific temper and creative imagination, with sound ethical values. It aims at producing engaged, productive, and contributing citizens for building an equitable, inclusive and plural society as envisage in the constitution."

The education eco-system must be such that that the unique capabilities of the student gets recognized and fostered under conducive environment. The curriculum must promote unity and integrity of all knowledge with emphasis on experiential learning. Multi-disciplinary professional education shall synergize creativity, conceptual understanding, critical thinking, decision making, team work and human values. The education system shall ensure integration of specially abled students and socio-economic disadvantaged students into the main stream process. Major concerns in the present higher education system as elucidated in the NEP-2020 document, which are also relevant to the State of Goa are:

(1) Fragmented Higher Education Ecosystem
(2) Less Emphasis on Cognitive Skills and Learning Outcomes
(3) Rigid Separation of Disciplines, Early Specialization & Streaming of Students into Narrow Areas of Study
(4) Limited access to socio-economically disadvantaged areas and teaching in local languages
(5) Limited teacher and institutional autonomy
(6) Mechanism for merit based career advancement for faculty
(7) Less emphasis on research and research funding across disciplines
(8) Suboptimal governance and leadership of higher educational institutions
(9) Ineffective regulatory systems
(10) Large universities with low standards of UG education

The NEP-2020 document proposes the establishment of the following FOUR national regulators for formulation of policies, implementation and monitoring.

a) National Higher Education Regulatory Council (NHRC)
b) National Accreditation Council (NAC)
c) Higher Education Grants Council (HEGC)
d) General Education Council (GEC)

Some of the recommendations made by this 'Professional Education' Committee may have to be revised based on the guidelines issued by these regulators.

1.1 INTEGRATING PROFESSIONAL EDUCATION WITH HIGHER EDUCATION

Goa University (Est:1984) is the only State University that is presently awarding degrees in 'Higher Education'. The Higher Education degree programs can be broadly classified into SEVEN domains:

(1) Physical Sciences- Physics, Chemistry, Mathematics, Microbiology, Earth, Ocean & Atmospheric Science

(2) Humanities & Social Sciences: Sociology, History, Journalism, Media, Language, Philosophy, Political Science, Social Work, Psychology

(3) Agriculture and Allied Programs: Fisheries, Horticulture, Forestry, Veterinary

(4) Health Science, Mental Health & Allied Programs: Medicine, Dentistry, Pharma, Nursing, Ayurveda, Clinical Psychology, Special Education, Psychiatric Social Work

(5) Law

(6) Management

(7) Engineering & Architecture

EXISTING DEPARTMENTS & SCHOOLS AT GOA UNIVERSITY

Biotechnology	Botany	Chemical Sciences
Earth, Ocean and Atmospheric Sciences	Electronics	English
French & Francophone Studies	Goa Business School	Hindi
History	International Relations	Konkani
Library & Information Science	Marathi	Mathematics
Microbiology	Philosophy	Physics
Political Science	Portuguese & Lusophone Studies	Sociology
Study of Social Exclusion & Inclusive Policy	Women's Studies	Zoology

The committee recommends that a comprehensive review of the higher education curriculum, their credit structure, contents, methods of assessment are essential to make it MULTI-DISCIPLINARY and FLEXIBLE. Presently it is mostly interdisciplinary and has a defined program structure.

1.2 PROCEDURE TO CONVERT STANDALONE INSTITUTES INTO MULTIDISCIPLINARY INSTITUTES

The committee recommends structural re-organization of the some of the existing institutions into

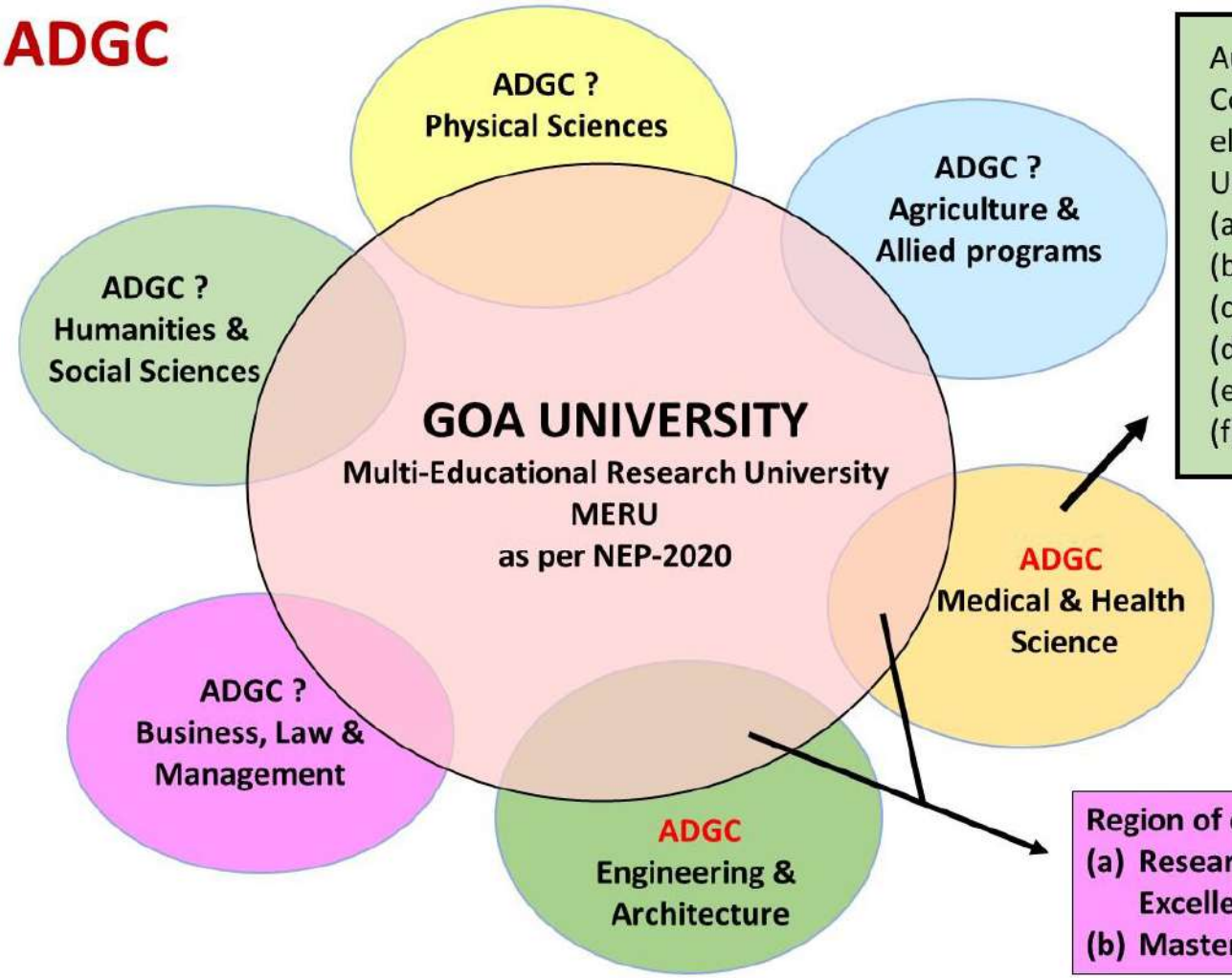
- Autonomous Degree Granting Colleges (ADGC) in line with the NEP-2020.
- Goa University shall empower these ADGCs to AWARD UNDER GRADUATE DEGREES (UG) ONLY.
- ADGCs shall be GOVERNMENT AIDED COLLEGES and governed by a Board of Governors
- Nearly 30,000 students are presently enrolled in various higher education programs in Goa. This needs to be enhanced to 60,000 by 2025

The **Autonomous Degree Granting Colleges** could be broadly classified into following categories:

1. Physical Science – requires further consultation with stakeholders
2. Humanities & Social Science – requires further consultation with stakeholders
3. Agriculture and Allied Programs – shall remain affiliated or constituent college of Goa University
4. Business, Law, & Management – requires further consultation with stakeholders
5. Engineering & Architecture – ***Goa College of Engineering shall become an ADGC from 2021***
6. Health Science, Mental Health & Allied Program – ***Goa Medical College shall become an ADGC from 2021***

- Faculty members of these ADGCs who are recognized Ph.D guides of GU and are actively involved in research shall be **designated as Associate Faculty of Goa University**. They shall be permitted to teach PG level professional education courses, for which degrees shall be awarded by Goa University. This will bring in synergy between Autonomous Degree Granting Colleges and Multi-Disciplinary University.
- Faculty from Goa University and the Associate Faculty from ADGC will work together and establish "**Centre of Excellence**" in specific areas which will address issues that has direct benefit to the State and are also frontier areas of global research.

ADGC



Autonomous Degree Granting Colleges after **5 years** shall be eligible to become University provided

(a) Increase in Student Intake
(b) Increase in Number of Courses
(c) Enhanced Quality of Teaching
(d) Infrastructure
(e) Qualified Faculty
(f) R&D and Consultancy

Region of overlap indicates

(a) Research Centres & Centres of Excellence
(b) Master's and Ph.D. programs

8

- **National & International Ranking for Universities** are based on
    (a) Research Publications
    (b) Quality of Research
    (c) Quality of Faculty & Students
    (d) International Students Exchange
    (e) Twinning & Sandwich Programs
    (f) Private, Central & State Govt. Funding

Hence till 2025, Goa University shall be the only STATE University.

- Presently Professional Education curriculum, its administrative structure, infrastructure requirements are strictly governed by the NATIONAL REGULATORS. NEP-2020 clearly indicated that this has to be relaxed. Further guidelines are awaited.
- Curriculum and course content shall be reviewed and revised periodically depending on the national and global requirements. While revising the course content, **bench marking shall be done with national and internationally reputed and acclaimed universities**.
- All ADGCs shall follow **SAME Academic Calendar and credit structure in order** to ensure transfer of credits for students pursuing degree in multi-disciplinary domains.
- There shall be **major changes** in the **ASSESSMENT PROCEDURES** in all professional education programs
    - **50% weightage for memory based assessment** (similar to conventional question papers)
    - **50% weightage for competency based assessments** (open book exam, project, assignment, creative thinking, critical analysis, lab work). Emphasising on 'competency' or 'skill' based assessment from foundation stage. **Blooms Taxonomy must be embedded into the assessment process at all levels.**
- The structure of the curriculum and the credit distribution must ensure that there is holistic development of the students: **domain knowledge and soft skills** which are essential for students graduating with degrees in Professional Education.

- In the revised curriculum **10% of the total credits be reserved for on-line courses** which are offered by recognized institutions in India or abroad and **5% of the credits for sports, arts, music and other co-curricular and extra-curricular activities**.

1.3 MECHANISM FOR TEACHER EDUCATION IN MULTIDISCIPLINARY PERSPECTIVE

- The focus of NEP is on '**STUDENT CENTRIC**' education. **Faculty members are at the centre of this fundamental transformation process** in the education system. The governing and administrative mechanisms shall ensure appropriate procedures for selection, training and nurturing of qualified faculty members at the appropriate levels.
- **Mandatory Orientation** programs shall be conducted for the **faculty members on PRIORITY from JAN.2021** on **curriculum preparation with multidisciplinary approach, implementation plan, revised assessment** and evaluation process.
- **Holistic development of faculty in multi-disciplinary** environment is a pre-requisite, so that they are empowered to guide students in multi-disciplinary areas. These programs shall be preferably in **residential mode** for a period **of 5 days.** The training programs shall be funded by the Government and shall be conducted by Government recognized institutes.
- Faculty members shall be given extensive training in **social legislation**, **counselling, mentoring and career guidance to the students**. **Pedagogy of teaching** shall also be upgraded periodically to meet the national and global requirements of the program.

1.3.1 Faculty

- Minimum qualification for faculty members from 2025 shall be Ph.D. or Master's degree with 10 years of industrial / field experience in relevant area at senior management level and above OR shall be as defined by the NATIONAL REGULATORS.
- The designation of regular faculty in all professional colleges shall be limited to only 3 levels – assistant professor, associate professor and professor with comparable financial packages as per the regulatory authorities.
- Tenure track system may be implemented for confirmation of faculty members.

- The governance structure of ADGCs shall be uniform in all professional programs
- In an eco-system that is fostering innovation and entrepreneurship, faculty members shall be permitted to form start-up companies and hold equity.
- The performance of the faculty shall be periodically assessed by giving appropriate weightage to various roles and responsibilities in a fair and transparent manner, through a process of self assessment in an objective manner.
- Faculty members shall be given recognition and rewards for publications in high impact journals, patents, copyrights, books, research collaborations and consultancy.

1.3.2 Curriculum

- ADGCs shall formulate Flexible Curriculum which will enable the students to formulate a course-plan with a defined degree at the end of three year or four years.
- Multi-point entry and exit after every ONE year.

  Students shall be able to maintain an Academic Bank of Credits, if he/she has to temporarily discontinue their studies or decides to redefine their degree curriculum.
- Professional Education curriculum may migrate from inter-disciplinary to multi-disciplinary education with flexible program structure in a phased manner for all professional courses.
- All Professional Courses shall follow THREE semester per year pattern. *ODD* Semester = 75 days; *EVEN* Semester = 75 days and SUMMER Semester = 30 days. Total 180 days of teaching /learning process. Exams / evaluation process will be 60-70 days / year for all three semesters.
- This will also provide intelligent and smart students to take up national and international internship during summer semester. Internship of minimum 6 months must be made mandatory.
- TWINNING and SANDWICH programs with institutes in India and other parts of the world is highly recommended.

- As per NEP recommendations, bilingual or multi-lingual transactions are essential in the academic activities. However, use of bilingual & multi-lingual teaching shall be practiced to the extent necessary based on the necessity of the professional courses.

1.4 PROPOSED FOR RECRUITING FACULTIES WITH OUTSTANDING TEACHING AND FIELD EXPERIENCE

- Government may consider a relaxation in the recruitment policy for highly qualified and skilled professionals for a limited period.

- If the candidates fulfilling RRs are not available. If necessary, a comprehensive revision of state's recruitment rules (RR) and recruitment roster to be done without affecting the reservation policy. Countries such as USA, UK, Australia and European Countries follow similar relaxation in citizenship rules to attract professionals with exceptional qualifications and skill sets.

1.5 FORMALITIES OF ATTRACTING SKILLED FACULTY FROM INDUSTRIES

- 20-30% of the faculty positions in an institution shall be reserved for individuals with PG degree and professional experience in the relevant field without affecting statutory requirements if any. This will strengthen interaction between professional and academicians leading to consultancy projects, internships, incubation, start-ups and student placements.

1.6. TEACHING ASSISTANTSHIP FOR PHD STUDENTS AND RELATED ISSUES

- Govt. of India has schemes to provide assistantships to full time Ph.D. students in certain professional education courses/programs. Similar financial assistantship schemes should be framed by Government of Goa for students pursuing Ph.D. degree in higher education.

1.7 FORMALITIES FOR CREATING A POOL OF OUTSTANDING SENIOR AND RETIRED FACULTY AS MENTORS

- Goa University has programs through which visiting faculty from reputed institutions in India or abroad or academicians in other countries can be invited to **teach 'Summer Schools' or 'Proficiency Courses'.** The number of such interactions must be substantially increased to cover all areas of professional education.
- Research Advisory Committees (RAC) with external members
  - periodically review the research outcome,
  - mentor faculty members,
  - facilitate collaboration with other national and international universities.
  - advise faculty members on multi-disciplinary project teams and funding opportunities.
  - Provision shall also be available to retain some of the RAC members **as 'Chair Professor' or 'Distinguished Scientist' or 'Emeritus Professors' or 'Mentors' to ensure continuity and support for young researchers**.
- Institutions must effectively utilize the **Alumni Network.**

1.8 KEY INFRASTRUCTURE REQUIREMENTS FOR EFFECTIVE IMPLEMENTATION OF NEP 2020

- **Digital Communication Network** of the State needs to be substantially enhanced.
- **Buildings, communication and transport must be accessible to faculty and students with special needs**. It should also have qualified counsellors.
  - A regulatory body for qualifying 'counsellors' may be established.
- **Mobility or Transportation network** in the State has to be improved if students and faculty are to be engaged in multi-disciplinary learning across different campuses, with due consideration for **people with special needs**.
- **Professional Education must have RESIDENTIAL programs**. The overall performance of the students (academic & co-curricular) will be enhanced.

Hence hostel facilities have to be provided on campus. Students must spend 50% of their academic life in hostels.

- **Research & Technology Park** must be established for all Professional programs**,** where in students, faculty, startup companies and experienced professionals will work together to create 'technical & financial' wealth for the society.

- One of the challenges that has to be addressed while **hiring professionally qualified graduates**, is to spread awareness that qualifications will not necessarily be in 'silos' it will be based on **competency** or **specialization** to promote multi-disciplinary education.

1.9 MEASURING EFFECTIVENESS OF IMPLEMENTATION OF NEP 2020

- **State Professional Education Curriculum Framework & Regulatory Procedures Monitoring Committee** shall be constituted similar to the National Curriculum Framework Committee for School Education.

- **State Achievement Survey (SAS)** shall be conducted at regular intervals in line with proposed National Achievement Survey (NAS) for monitoring achievements and learning outcomes, gross enrolment ratio (GER) and other performance parameters

- The present **intake to various professional courses needs to be reviewed**, if necessary the number of seats must be increased or the programs must be discontinued after proper analysis of the ineffectiveness of the programs during that particular time period and new programs must be introduced.

- There are **delays in recruitment of qualified faculty** both in government and private educational institutions this is affecting quality of teaching and learning. Steps must be taken by college administrators for timely recruitment of qualified faculty.

- **Student:Teacher ratio** is also a very important parameter that has an influence on teaching-learning process, the recommended ratio is 10:1 to 15:1 depending on the type of course / program.

- The committee recommends that **sector specific survey** shall be conducted every 3 years to access the future job markets, demand for products and services in the State of Goa. This data MUST mandatorily be used in revising

the curriculum, seat matrix in the colleges, starting of new programs and closing of old programs, creating awareness among students and public in general on job markets.

- **Graded Autonomy to institutions engaged in Professional Education will ensure focused efforts by faculty & college administrators in upgrading and revising the curriculum to fulfil the needs of the "SOCIETY"**. The term "SOCIETY" includes professional working in health care sectors, community medicine, agriculture, engineering, law, management, research in science and other frontier area at national and international level.
- Technology is changing in all sectors, the curriculum structure must be flexible to **accommodate 'unemployed**' personnel back into the academic programs and provide relevant competency / skill based education and **enable them to be 're-employed'.**
- There are a large number of government and privately owned professional institutions in Goa, there is an urgent need for comprehensive consultations with the stake holders before finalizing the policy and the road map.

2.0 SPECIFIC GUIDELINES AND ROADMAPS

2.1 AGRICULTURE AND ALLIED PROGRAMS

2.1.1 Present Agriculture Education in Goa

- BSc (Hons.) – 4 year program – offered at Don Bosco College of Agriculture
- Diploma in Agriculture – 2 year – offered at Ramnata Crishna Pai Raikar School of Agriculture
- BSc (Home Science) – 3 year program – offered by Goa College of Home Science
- **MAJOR THRUST** must be given to integrate

(a) **Engineering and Technology into traditional Agriculture and Allied Programs**

Use of AI, Satellite farming, drip irrigation, precision agriculture, vertical farming, polyhouse, hydrophonics, aquaculture, biotechnology, fertilizers, post harvest technologies.

(b) **Management & Business practices into Agriculture and Allied Programs**

- Supply chain management, product price, value analysis, transport, resource management, productivity management (yield/acre), including **establishing AGRI-BUSINESS centre**.
- Institutes for Fisheries, Forestry, Veterinary, Diary & Poultry needs to be established.
- **National Accreditation Board for Laboratories (NABL) approved** laboratories must be established within these institutions to provide – soil testing data, water testing, chemical analysis, agri-clinics.
- Agriculture and allied programs **requires field experience** – suitable infrastructure, research parks, agri-clinics, agri-business, agri-techparks are most essential elements for this sector.

2.1.2 Setting Up of Agri Techno Park

- **Agri-Tech Park shall include:**

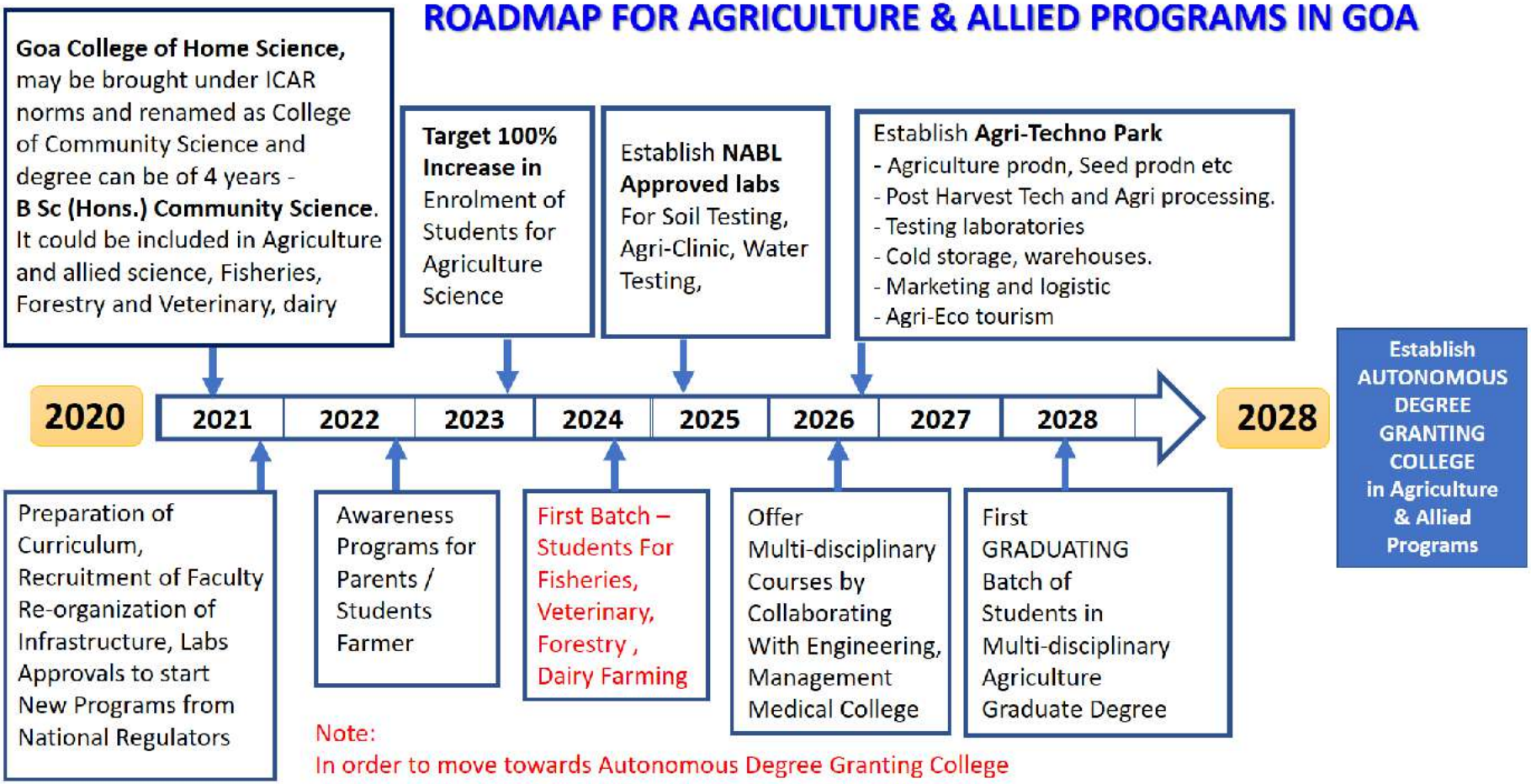
- Research units, Production of vegetables, fruits, field crops, seeds, hybrid seeds, flowers, mushroom, bio-formulations, tissue culture.

- Processing and value addition
- Biotech units
- Cold storage/Ware houses
- Marketing logistics
- Testing laboratories
- Organic Farming and production - Concepts and benefits of organic farming, Organic cultivation, Organic products, Organic bio-formulations.
- Agro-Eco Tourism Projects Centers

➢ Students and faculty members will be associated with the TECH-PARKs for performing their project and research work. Some of the areas are: post harvesting processes, cold storage, polyhouse, urban farming, hydrophonics, precision agriculture, agri-tourism, software for farm to market connectivity, community medicine, medical instrumentation.

➢ The committee recommends that the schemes of the State Government to support AGRI-BASED ENTERPRENEURS with financial institutions be reviewed or re-formulated in consultation with **Indian Council for Agricultural Research (ICAR).**

ROADMAP FOR AGRICULTURE & ALLIED PROGRAMS IN GOA



Note:

In order to move towards Autonomous Degree Granting College

- SUBSTANTIAL INCREASE in students in-take
- Consolidation of Infrastructure, Multidisciplinary Curriculum

23

2.2. MEDICINE AND ALLIED HEALTH PROGRAMS

2.2.1 REVISING THE DURATION, STRUCTURE, AND DESIGN OF HEALTH EDUCATION

The committee recommends that the present Goa Medical College be empowered into an Autonomous Degree Granting College from Academic Year 2022-23. By integrating standalone institutions into multi-disciplinary institutions that offer graduate degrees in 1) MBBS, 2) BDS, 3) B.Pharma and Dipoma, 4) BSc Nursing, and 5) AHS, Allied Health Sciences:

- Goa Medical College
- Goa Dental College
- Govt. College of Nursing
- Goa College of Pharmacy & Private Pharmacy College
- Institute of Psychiatry and Human Behaviour

Master's and Ph.D level degrees shall continue to be awarded by Goa University till 2025

(1) MD / MS / MCH / DM / MDS
(2) M.Pharma / Ph.D. Pharma
(3) PGDMLT
(4) Doctor of Medicine (MD) in Community Medicine
(5) M.Phil in Psychiatric Social Work, M.Phil in Clinical Psychology

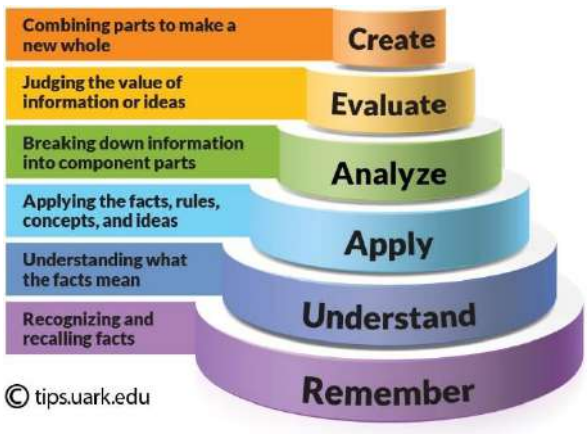
All India Institute for Ayurveda, Yoga and Naturopathy: begin Operations from AY 2022-23. AIIAYN shall also find a place in **MEDICAL TOURISM** at National and International level with the theme "Sarvejanha Sukeno Bhavantu" (**"सर्वजन्हा सुनिको भवन्तु")**

- **Credit based curriculum, with multipoint entry-exist system** shall be implemented from AY 2022-23, subject to approvals from National Regulators.
- Flexibility shall be built into the **credit structure** to enable students to pursuing courses of their choice in **diagnostics, clinical, surgical practices and preventive medicine**
- The programs shall be made **inter-disciplinary and multi-disciplinary with competency / skill based assessment**. Provision shall be made for students to take credit based courses in engineering, law and management, humanities.

- **Nursing Education needs overall upgradation** in terms of curriculum, infrastructure, faculty, student assessment, training should be mandated.
- Doctors **MUST practice HUMAN VALUES**. As part of their annual assessments, students shall be assessed for their professional skills and human values. During **internship students must be assessed** for practicing moral and ethical values, communication, positive approach, stress management, time and resource management.
- Medical profession demands periodic upgradation of knowledge, practices, tools and techniques. Faculty members shall be sent for **periodic training to upgrade their knowledge and skills**. The **curriculum will also be revised at regular intervals** in line with national and international practices. **Classroom and Laboratory infrastructure** shall be upgraded on regular basis in line with curriculum revisions.
- This committee is aware of **Multiple National Regulators for medicine and allied programs –** National Medical Council (NMC) , Pharma Council of India (PCI), DCI, NCI etc. NEP-2020 recommends revision in the regulatory mechanisms presently in practice. This could pose a challenge while preparing curriculum for graduate degree programs.
- The committee recommends that students of **Allopathic Medical Education must have a basic understanding of Ayurveda, Yoga, Naturopathy, Unani, Siddha and Homeopathy** and vice versa as recommended in the NEP-2020 document.
- Specific plans have to be developed and implemented to **retain and nurture talented, qualified and committed** faculty at all levels and in particular young faculty.
- Health care has four level – primary, secondary, tertiary and super speciality. Professionals from **super speciality hospitals shall be given the status of 'Adjunct Faculty' in ADGCs.**
- **Ph.D** programs in **psychiatric social work, clinical psychology and allied health science** have to be given **priority.**
- **Study leave** for higher education should be made available.

2.2.2 PROMOTING PREVENTIVE HEALTHCARE AND COMMUNITY MEDICINE

- **Retired teaching faculty, or practicing professionals are** an asset to medical profession. Their services shall be utilized in academics and training in preventive health care and community medicine.
- **Mental health is a priority area**. Special educators, government approved certificate programs for psychiatric and social work, audiology, orthoses, prostheses, physio-theraphy, trauma care are essential. Defined curriculum, certificate courses, skill set assessments must be introduced to **recognize these students as qualified professionals**.
- Certain **traditional practices** which have been found effective for a particular community of people or a region must be recognized and the **practitioner must certified and encouraged and such practices must be documented and validated.** This knowledge is already deep rooted in the Indian and Goan society in the form of specific traditions and customs. Therefore, **emphasis should be given on Ayurvedic methods for maintenance and promotion of health.**
- **Government certified courses for employment generation:** MRI-, OT-, Eco-Card-technician, sign language interpreter, audiology, physiotherapist, etc.
- Faculty must emphasize on understanding the cconcepts, not to teach but to enable student to '**learn**', by using a combination of tools and methods – books, demonstrations, field visit, critical thinking, team work. **Class room environment must change, and there is need for 'Smart Classrooms'.**
- **Quality Research** demands that the student has all the attributes as per **Bloom's Taxonomy.** The curriculum & assessment tools and techniques must follow this approach, and must be **applicable to all PROFESSIONAL GRADUATE DEGREE programs**.

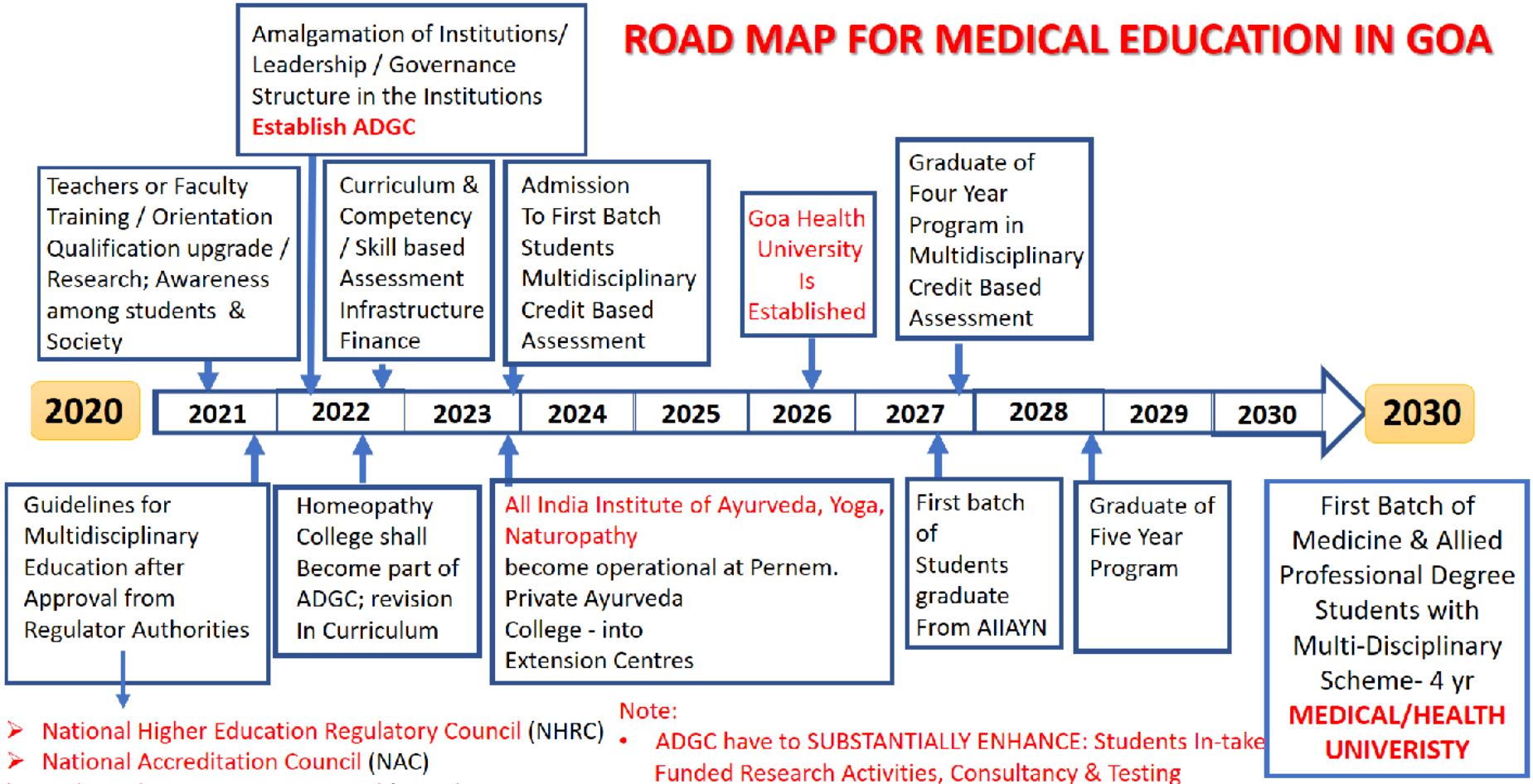


- One of the essential attributes of a doctor is to be able to communicate in local language, hence **bi-lingual and multi-lingual teaching and learning shall** be practiced. Faculty and students have to be trained in local language, necessary resource materials have to be developed.
- Language should not be a **hinderance while treating patients or providing services**. Electronic language translating machines shall be compulsorily used. Goa University shall work in a 'Mission Mode' to bridge this gap, by developing devices that will have voice translation and sign language capabilities.
- **AYURVEDA,** Yoga, Naturopathy, Unani, Siddha and Homeopathy **FIND A SPECIAL PLACE IN GOA** with the establishment of the ALL INDIA INSTIUTE OF AYURVEDA, YOGA and NATUROPATHY (**AIIAYN**), Dhargal, Pernem Taluk, North Goa. This institute will be offering graduate and post graduate programs in all the above domains. This institute will attract NATIONAL and INTERNATIONAL students.
- Presently GOA has TWO PRIVATE institutes: Bharateeya Sanskriti Prabodhini's Gomantak AYURVEDA Mahavidyalaya & Research Centre and Bachelor of Ayurvedic Medicine and Surgery (B.A.M.S.) with each of them having an intake capacity of 60. Each of them offers the degree programs viz., M.D. Ayurveda Medicine (Ayurveda Vachaspati-Kayachikitsa) and M.D. Ayurveda Pharmaceuticals (Ayurveda Vachaspati-Rasashastra and Bhaisajya Kalpana). Further, Shivgram Education Society's Shri Kamaxidevi HOMEOPATHIC Medical College & Hospital offers .Bachelor of Homeopathic Medicine and Surgery (B.H.M.S.) - Intake capacity 50
- The Ayurveda Mahavidyalaya shall collaborate with AIIAYN'. However in the interim period the committee recommends that the curriculum and assessment methodologies can be UPGRADED and made MULTIDISCIPLINARY**.**
- The Homeopathic Medical College and Hospital shall become part of the Goa Health University.
- Documentation of traditional knowledge is in progress. The committee recommends that SPECIAL EMPHASIS must be given to record and preserve this knowledge and skills.
- Courses in Sanskrit Vyakarana, Nyaya, Meemamsa, Darshana, Ayurvedic Nursing, Botany of Ayurvedic medicinal plants, Pharmacy, Panchakarma,

Dietetics; Courses in Health Sciences- Naturopathy, Sports Science, Public health, Physiotherapy; Courses in Agriculture- Ayurvedic Herb Farming; Management & Technical Courses such as- hospital and healthcare management medical and biomedical instrumentation could be introduced from the AY 2021-22. Similarly for courses in Homeopathy, Yoga, Naturopathy, Acupuncture and Acupressure, Sports medicine, Speech and audio therapy, Cosmetology, Trichology, medical counselling, Psychology, ICU technology, medical transcription, Nutrition and dietetics and Bioinformatics,

- Ancient schools of teaching and professional practices such as Sadvritta (Good Conduct), Shishyopanayaneeya (Guidance for new students), Vishikhanupravesha (Guidance for new practioners), communication skills and methodology for scientific discussions(Sambhasha) can be incorporated into revised professional course curriculum. There are also certain program specific courses which could be introduced such as Samarangana Sutradhara for architecture, Vrikshayurveda for agriculture and so on.
- B.Ed in Special Education offered by Dnyanvardhini Divyang Training College – 2 year degree course shall be part of Goa University.

ROAD MAP FOR MEDICAL EDUCATION IN GOA



- National Higher Education Regulatory Council (NHRC)
- National Accreditation Council (NAC)
- Higher Education Grants Council (HEGC)
- General Education Council (GEC)

Note:

- ADGC have to SUBSTANTIALLY ENHANCE: Students In-take, Funded Research Activities, Consultancy & Testing
- Enhance Infrastructure, Multidisciplinary Curriculum

In order to move from ADGC to University

32

2.3. Technical Education Programs in Goa

The committee recommends that the present **Goa College of Engineering be empowered into an Autonomous Degree Granting College from Academic Year 2022-23.** By integrating standalone institutions into multi-disciplinary institutions

- Goa College of Engineering
- Goa College of Architecture
- Govt. Polytechnic Colleges (Three Govt. Institutes)
- Industrial Training Institute (ITI – Presently under Ministry of Skill Development)

AUTONOMOUS DEGREE GRANTING COLLEGE (ADGE):

ONE - **Government Engineering College** - 95% Goan + 5% All India Quota – Admission based on GCET

In Goa nearly 1400-1600 students enroll for Engineering Education at UG level in these FIVE colleges: Civil, Mechanical, Electrical, Electronics and Telecommunication, Computer Engineering, Information Technology, Mining Engg

ONE – Goa College of Architecture

TEN – Govt. Industrial Training Institutes (ITI) under Ministry of Skill Development

FIVE – Private Industrial Training Institutes under Ministry of Skill Development

Engineering Skills: Welder, Mechanics, Refrigeration & Air Conditioning, Electrical, Instrumentation, Machinist, ICT Maintenance, Computer Operator and Hardware, Civil, Carpentry, Wireman, Plumbing

Non-Engineering: Hospitability, Fashion Design, Garment, Multimedia, Secretarial Practice, Travel & Tour

In addition, there are Diploma and Engineering colleges managed by Private Trusts with / without State Government Aid:

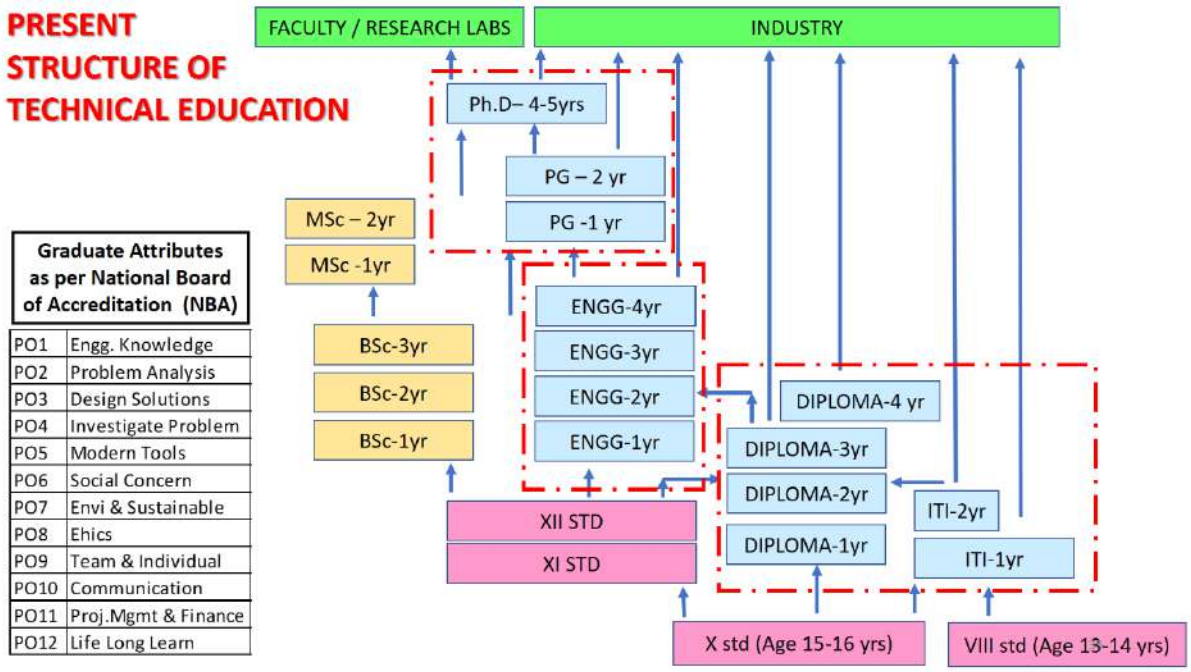
TWO – Diploma Institutes offering Civil, Mechanical, Electrical, Electronics, Computer, Ship Building, Automobile, Architecture, Hotel Management & Catering,

THREE Institutes offering Hotel Management, Catering Technology, Culinary Sciences and Food Craft,

FOUR - Private Engineering Colleges

LIST OF PROGRAMS UNDER "TECHNICAL" EDUCATION – as per present National Regulator - AICTE

		DIPLOMA	POST DIPLOMA	UNDER-GRADUATE (UG) DEGREE	POST GRADUATE DIPLOMA	POST-GRADUATE (PG) DEGREE
1	ENGINEERING & TECHNOLOGY	■		■		■
2	ARCHITECTURE			■		■
3	TOWN PLANNING					
4	APPLIED ARTS & CRAFTS			■		■
5	HOTEL MANAGEMENT & CATERING TECHNOLOGY	■	■	■	■	
6	MANAGEMENT					■
7	COMPUTER APPLICATION	■		■		
8	PHARMA	■		■		■



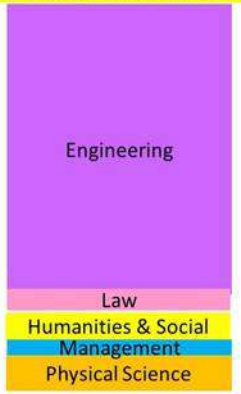
- **ADGC will grow into Multi-disciplinary University in 5-10 years** – Increase the number of courses – preferably multi-disciplinary, faculty qualification, research and development, infrastructure, funding.
- Formulate policies that will create effective **engagement between industry and technical** ADGCs. This will promote internship, joint research work specific to the State of Goa.

- The financial model for autonomous degree granting colleges and MERU has to be carefully planned to ensure uniformity, sustainability and growth. Private funding into MERU and ADG colleges must be encouraged through endowment funds, PPP models, etc.
- In addition to multi-discipline, **multi-cultural admissions** is also important in deciding the 'cultural landscape' of the institution. Hence provision must be made to accommodate 15-20% of students from outside the state/ country – supernumerary quota.
- A student must stay a **minimum period of 18 months on campus**. This would impart life lessons such as team work, communication and human values.
- **STRATEGIES FOR INCORPORATING – AI, 3D, ML, BIG DATA, BIO-TECH, NEUO-SC, NANO AT UG** - These courses are already being taught in inter-disciplinary mode. There is scope for improving the contents based on demand.

PROPOSED UNIFORM CREDIT BASED STRUCTURE FOR PROFESSIONAL EDUCATION

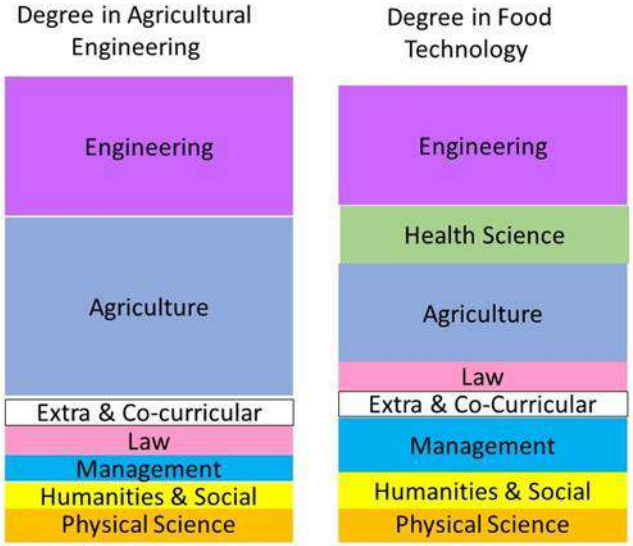
S.N	Proposed Year for Implementation	Present Nomenclature	Proposed Nomenclature	Duration	Credits	Cumulative Credits
1	AY 2023	Industrial Training – 1st yr	PE-Level - 0	01 year	20 cr	20 cr
2	AY 2024	Industrial Training – 2nd Yr	PE- Level - 1	01 year	25 cr	45 cr
3	AY 2025	Diploma-1st Yr	PE- Level – 2 **Certificate**	01 year	30 cr	75 cr
4	AY 2026	Diploma-2nd Yr	PE-Level -3A **Diploma**	01 year	35 cr	110 cr
5	AY 2027	Diploma-3rd Yr	PE –Level – 4A **Associate**	01 year	45 cr	155 cr
6	AY 2026	Degree – 1st Yr	PE – Level – 4B	01 year	45 cr	200 cr
7	AY 2027	Degree -2nd Yr	PE-Level - 5	01 year	55 cr	255 cr
8	AY 2028	Degree -3rd Yr	PE -Level – 6 **Graduate Degree**	01 year	60 cr	315 cr
9	AY 2029	Degree -4th Yr	PE- Level – 7 **Bachelor's Degree**	01 year	65 cr	380 cr
MASTER'S PROGRAM OFFERED ONLY BY THE UNIVERSITY						
10	AY 2030	Master Degree-1st Yr	PS- Level – 1 **Professional Degree with (Specialization)**	01 year	60 cr	440 cr
11	AY 2031	Master Degree 2nd Yr	PS Level – 2 **Master's Degree**	01 year	60 cr	500 cr
DOCTOR OF PHILOSOPHY PROGAM OFFERED ONLY BY THE UNIVERSITY						

PRESENT PROGRAM STRUCTURE

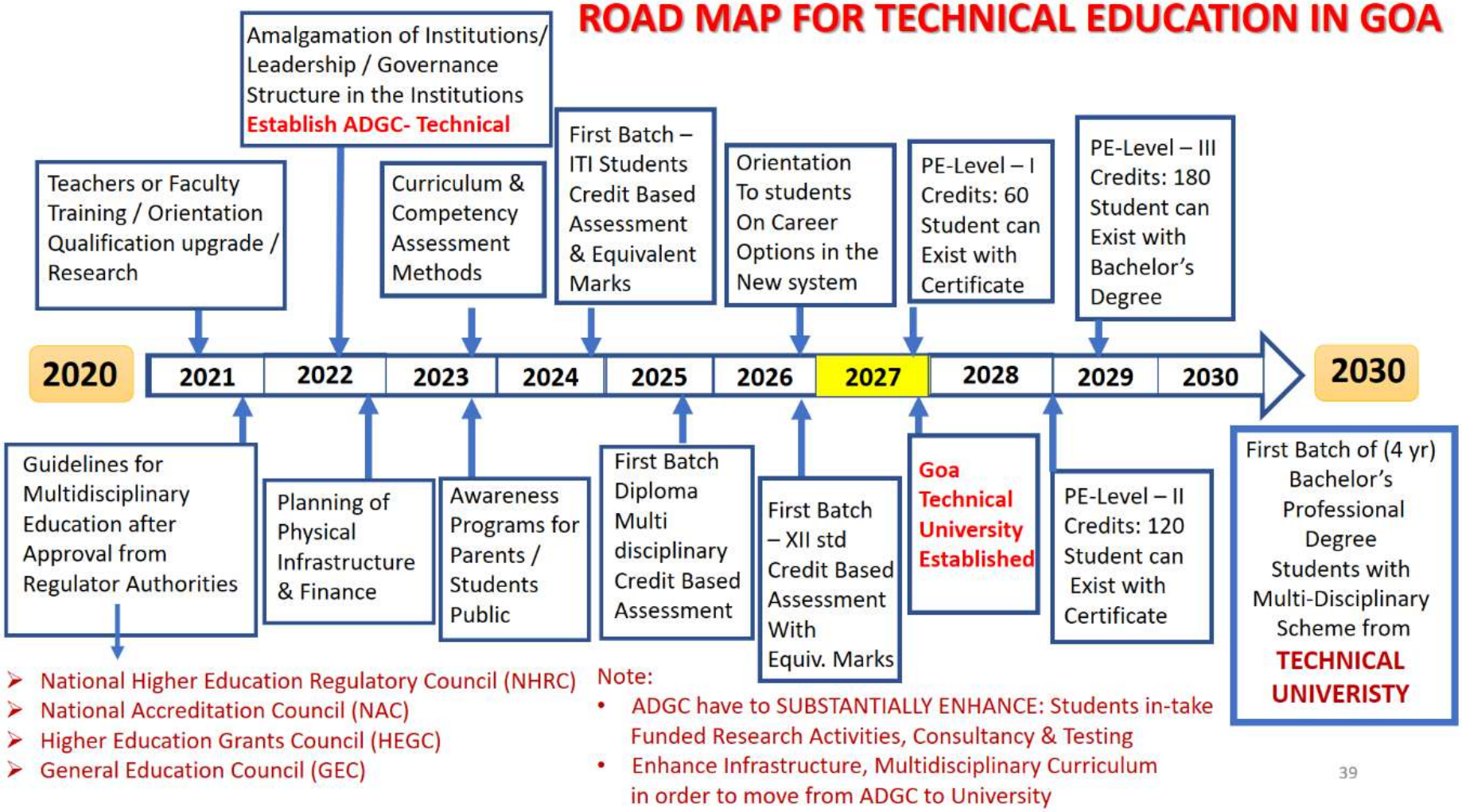


Engg: 75%
Science: 10%
Others: 15%

PROPOSED FLEXIBLE PROGRAM STRUCTURE



Essentially, the committee recommends the roadmap for technical education in a nutshell as described in the following chart:



- **ONE – Goa Institute of <u>Management</u> – AICTE approved** - Autonomous Institute – offering PGDM / MBA in Healthcare Management, Big Data Analytics, Insurance & Financial Services, Human Resource Management, Accounting.

The following technical education institutions in Goa do not come under the purview of the recommendations of this committee:

(1) BITS – Goa Campus – All India BITSAT

(2) National Institute of Technology (NIT) – Admission based on All India Ranking - 50% Goan and 50% All India

(3) Indian Institute of Technology (IIT) – Admission based on All India Ranking

Specific Recommendations for Law and Management Programs will have to be prepared in consultation with the respective stake holders. This committee did not have any members in these two areas of 'Professional Education'.

Report of the Sub-Committee on "Research, Innovation & Linkages with Industry"

Submitted to the

Directorate of Higher Education
Government of Goa
Goa

28th November, 2020

by

Dr. Satish Shetye (Chairperson),

Dr. Prasad Naik (Member), Dr. P. R. Pednekar (Member), Dr Sarvesh Sawant (Member),

Dr. Murari Tapaswi (Member), and Prof. Pranab Mukhopadhyay (Convenor)

Table of Contents

Executive Summary

The National Educational Policy (NEP) 2020 aims at significant changes in higher education in the country. A hallmark of the change is an emphasis on research and innovation in education programmes. Its implementation calls for introducing a new curriculum to inculcate a culture of inquiry, significant improvements in infrastructure (including laboratories, internet access, library services), and a boost for faculty improvement through refresher and research programmes. These will require enhancement of support for infrastructure development and undertaking of research. Another hallmark of the policy is the stress on industry-academia linkage to enhance the employability of graduates. Fulfilling this vision in the policy requires the industry's involvement in creating internships, supervision of dissertation research, and innovative programmes that boost interaction between academia and industry, for the benefit of both. This report makes several recommendations to support the ideas proposed in the NEP. Important among them are:

- *Make student dissertation/thesis research the backbone of research in colleges and Goa University at all levels: undergraduate, postgraduate, and doctoral.*
- *Introduce courses that help the student's research preparedness and enhance research infrastructure (including laboratories, library facilities, internet access).*
- *Create appropriate funding mechanisms for infrastructure development and support for research*
- *Tap the possibility of getting funds from corporations under their Corporate Social Responsibility provisions.*
- *Support faculty quality improvement and career development to make it compatible with the policy's emphasis on innovation and creativity.*
- *Enhance student employability through courses on work-related preparedness and provide real-world experience through internships and other similar programmes.*
- *Encourage industry to provide student dissertation supervision and internships.*
- *Encourage interaction between institutions locally, nationally, and globally.*

1. Introduction

The recently introduced National Education Policy 2020 (NEP) replaces the over three-decade-old National Policy on Education 1986 (NPE). The new policy has far-reaching implications for school and higher education in the country. The State of Goa has decided to implement NEP in the state. To implement it in higher education, the government has set up a committee to advise on the roadmap to be followed. This committee, in turn, has set up five sub-committees, each assigned to develop the roadmap in a specific area. One of the 5 sub-committees, the Sub-Committee 4 (SC4), has been assigned the task of developing a roadmap for "Research, Innovation & Linkages with Industry." The order forming this sub-committee, its constitution, and its mandate is given in Appendix A.

Among the fundamental elements of the NEP, the three that concern SC4 are the following. The first one is: inculcating a culture of research and innovative thinking at all levels of higher education, from undergraduate to doctoral. The second one is: to support research, innovative thinking and employability of graduates, emphasis on creating a linkage between academia and industry. The thirdd one is : aiming at job-readiness of every graduate. The task of the SC4 is centred on these three elements.

The SC4 met three times (on 15 and 30 October, and 18 November 2020) online to finalise its report. The report of the sub-committee is divided in 9 sections. The first section (the present one) introduces the report. Section 2 examines the salient features of the NEP that have a bearing on the tasks assigned to the SC4. This section briefly summarises the role of research, innovation, and academia-industry linkage in the vision of NEP. It then sets out the tasks that the system of higher education will need to undertake to implement the NEP. Section 3 introduces the skills that will need to be inculcated to encourage the formation of an ecosystem that encourages research. Section 3 also proposes courses that will need to be introduced in higher education to encourage research and innovative thinking. Encouraging research will mean considerable improvements in infrastructure. Section 4 proposes how this infrastructural improvement could be achieved. Section 5 deals with how to manage resources to support research at UG, PG and PhD level.

Section 6 elaborates on the desirable practices to encourage research. Section 7 gives suggestions on establishing/improving the academia-industry interaction. Section 8 gives some suggestions on encouraging inter-institutional collaborations. The last section (Section 9) provides a summary of the report and concludes with a table that links the terms of reference of the committee to sections where they are discussed.

2. NEP goals relevant to SC4

2.1 NEP Vision

The NEP considers research and innovation to be critical at education institutions in India, particularly those that are engaged in higher education. The NEP states that the best teaching and learning processes at higher education level occur in environments where there is a strong culture of research and knowledge creation. According to the NEP, creation of a robust ecosystem of research is perhaps more important now than ever before because of rapid changes occurring in the world today with regard to science, technology, and other fields of knowledge. The NEP aims at making the Indian society a leading knowledge society of the world in the coming decades. Towards this end, the NEP has noted the need for a significant expansion of research capabilities. Yet another pillar of the NEP is the goal to produce graduates who are well prepared to fulfil the needs of the society. This requires exposure to the environment and ideas that go beyond the classroom. The NEP, therefore, strongly recommends that students, starting from the undergraduate level, be given the opportunities for internships with local industry, businesses, arts and crafts enterprises, media, among others. The NEP also encourages research internships with faculty and researchers at their own or other research institutions, so that students may actively engage with the practical side of their learning and also improve their employability.

2.2 Enlarged participation and expenditure

The NEP envisages a major expansion in participation in higher education. The aim is to increase the national Gross Enrolment Ratio (GER) in higher education from 26.3% (in 2018) to 50% by 2035. Goa's GER is higher than the national average. Nonetheless, assuming that the state's GER

at present is around 35%, it will still need to increase opportunities and infrastructure to meet this goal of 50% GER. Such expansion calls for an increase in funding. NEP proposes that the Centre, along with the state governments, will collaborate to increase the public investment in the Education sector to reach 6% of the national GDP.

2.3 Revised structure

To meet its vision, the NEP proposes a revision of the structure of educational institutions and educational programmes. With regard to the former, it is proposed that in the future, there will be only three kinds of institutions of higher education:
(1) university;
(2) autonomous college;
(3) constituent college (which is essentially a part of a university).
Each of these institutions will be multidisciplinary, cater to both undergraduate and postgraduate students, and are envisaged to have both teaching and research components.

The NEP aims to break the present compartmentalised education system (for example, arts, science, and commerce as well separated independent streams) into a holistic system (for example, a student of mathematics should be able to opt for a course on psychology related to teaching). Similarly, the policy provides considerable encouragement for multidisciplinary research.

To encourage research among the faculty, the NEP proposes provision for career advancement opportunities for the faculty members through refresher courses, research grants, and infrastructure improvements. For students, this means more scope for taking courses that involve independent research-based projects under the supervision of a faculty member.

To accommodate such changes, the NEP proposes that the undergraduate degree will be of either 3- or 4-year duration, with multiple exit options. A student can exit with a certificate after completing one year or a diploma after completing two years of the undergraduate course. The bachelor's degree will continue to be awarded to students completing the prescribed tenure (3 years) of the course. If the student spends an additional year carrying out some research, he/she

will get a bachelor's degree “with research”. The 4-year undergraduate degree would make this degree at par with modern international standards. A student completing the 4-year bachelor’s degree with research can get admission directly to the PhD degree or one-year master’s degree.

Succeeding sections outline a possible roadmap to implement the vision outlined above with regard to research, innovation, and linkage with industry. The next section examines the skills that that are needed to create a researcher.

3 Research and innovation in higher education

NEP’s goal is to make research in higher education institutions (HEI) a part of their culture. The NEP recognises that this requires a change in how anyone associated with an HEI thinks. That means both students and their teachers have to inculcate new methods, practices, and skills in all aspects of their work. In this section, we discuss what they are and suggest ways to inculcate them in the higher education ecosystem.

3.1 The method of Science

It is often assumed that that scientific thinking is needed in topics that are covered in the stream of science alone. The NEP expects a break from this thinking. It expects that scientific thinking begins when anyone asks a question, no matter what his or her stream of education is: arts, commerce, science, or otherwise. It must also be recognised that scientific thinking follows a method that allows systematic and trackable progress in answering the question. The science-based method of hypothesis formulation and its evaluation to either accept or reject it must become an essential course for all streams of education early in a student's career. The role that this method has played to make progress in all streams of knowledge must be made known to the student early in his or her career. This requires the introduction of suitable courses that prepare the student to develop a researching mind or research orientation.

3.2 Research tools

While what is said above exposes the student to the philosophy that forms the backbone of research thinking, a researcher needs practical tools to make progress towards finding answers to questions. Perhaps the most important of these tools is the ability towards analytical thinking. Good analytical work requires students to follow some protocols, procedures and a well-established plan. Students also need to develop subject-specific or project-specific analytical skills, or perhaps interdisciplinary analytical skills. Courses that inculcate these skills are needed to expose the student to them early in his or her career. Moreover, these skills need to be practised through the undertaking of projects.

3.3 Employability skills

A common observation is that a good student, including a good researcher, does not always fare well in the real world or workplace because of a lack of skills that have often been described as "soft skills". NEP's emphasis on employability requires that these skills be taught through formal courses early in a student's career to complement the research skills. The most important of these skills is the verbal and written communication. Others have not yet found a place in higher education curricula. They include the ability to get along with people in the workplace, managing stress, developing empathy and social responsibility, among others.

4. Infrastructure to support research and innovation

4.1 Introduction

The vision outlined in Section 2 offers formidable challenges in creating adequate infrastructure to support research and offer an opportunity to faculty and students to innovate. This section outlines the infrastructure required for the purpose. The section focuses on the undergraduate, post-graduate, and doctoral programmes offered in general education institutions of Goa, i.e.,

primarily general education colleges and the Goa University. We have not examined the needs of professional institutions for research. There are two reasons for this. Firstly, there is a separate sub-committee that is looking at professional education. Secondly, professional education usually comes under the purview of separate bodies that set education standards.

4.2 Arts, Science, and Commerce

As a consequence of the above arguement, we examine fields that come under the arts, science, and commerce branches only. Presently, of the students who join these branches at the undergraduate level, approximately half go for commerce, about a third for science and the rest for arts (these figures, of course, change with time). The need for having laboratories increases the cost of science programmes in general and for research in particular. Needed most for arts and commerce for research are databases and literature available from the internet. This involves the cost of such information and the cost of setting up facilities to access it (terminals and internet access). Keeping these constraints in mind, major facilities that will need to be created to inculcate the research culture at the undergraduate level are:

1. Upgrading undergraduate laboratories in colleges to enable students and faculty to take up undergraduate research. We expect this research to be associated with an undergraduate dissertation under the proposed 4-year undergraduate degree with research.
2. Another need for science students and faculty is access to journals and databases. This requirement is similar to the ones felt by arts and commerce students, as noted next.
3. Setting up or upgrading of hubs with terminals to access databases and other sources of information for commerce and arts. Such hubs will need to have high-speed internet connectivity.
4. Upgrading and setting up postgraduate student laboratories and doctoral research laboratories will be needed in colleges that offer postgraduate and doctoral programmes.

4.3 Central sophisticated instrumentation facilities

Science laboratories, particularly at the postgraduate and doctoral level, need access to sophisticated and expensive equipment (e.g., scanning electron microscope). It is often considered useful to set up such facilities at a central location, with access to all users. Such a facility could

be set up at the Goa University with access to users from all departments of the university and the colleges that come under the university system. The facility should preferably be run by professionally qualified persons/groups and not necessarily by a department or faculty. Smaller versions of such instrumentation hubs having less costly equipment should also be set up in clusters of colleges in different parts of the state.

4.4 Support to faculty members

Successful implementation of the NEP will require the faculty from colleges and the university to upgrade to take up their own research and to supervise student research. This will need the creation of opportunities for faculty to upgrade their knowledge base and research skills. Regular refresher (and new) courses are one mechanism to achieve this. However, the effort required will be formidable, considering the increase in load that the new curriculum under the NEP will entail. Hence, the issue may require efforts at a national level.

5. Resources to support research

The needs identified in the previous section to fulfil NEP's vision towards research requires considerable enhancement of resources available to institutions of higher education. SC4 recommends that this support be provided through three channels: a fund for research infrastructure development, a state research foundation for supporting research relevant to the state complementing the existing funding through Central government funding agencies, and the existing funding by the Goa government departments to support research in specific areas of interest to the department.

5.1 Fund for research infrastructure development

Development of laboratories and other infrastructure required to implement NEP will require considerable funding. SC4 proposes setting up of a fund to provide resources towards infrastructure building and developing in institutions of higher learning in the state. The fund will help new faculty members to set up their research laboratories as well as student laboratories. This

fund will support not only science laboratories but also in setting up facilities for training students in various job-oriented craft courses (e.g., pottery, sculpture, Goan wine-making, home-science, among others). This fund will also help colleges to set up facilities with fast access to the internet and data bases.

5.2 Goa State Research Foundation

In India, there exist a large number of funding agencies for funding of research projects in varied areas. For example, Ministry of Science and Technology (MoST) has Department of Science and Technology (DST) under it. Under DST, one has "Science and Engineering Board" (SERB) which has a large number of funding schemes for areas under science and engineering.

Under the NEP, another independent body, National Research Foundation (NRF), is envisaged to fund research activities at university level (limited to university faculty members, not open to scientists from other national research laboratories). Unlike the present funding agencies which fund only in areas of their interest, the NRF funding will be in all areas (humanities, sciences, education, medicine, agriculture etc.). In that sense, NRF will be a unique research funding agency for the university faculty members.

At state level, in all states, DST has state Council of Science and Technology (e.g. in Gujarat GUCOST, in Madhya Pradesh MPCOST, in Bihar BCOST, etc.). Goa also has "Goa State Council of Science and Technology" (GSCOST) under the Department of Science, Technology and Environment, Goa. However, the role of these state bodies of DST is mostly confined to promotion of science, technology, and environment issues in the states. They are not funding bodies as such.

In light of the above, in parallel with NRF, SC4 proposes establishment of a state research foundation, the State Research Foundation-Goa (SRF-Goa). The mandate of this SRF will be funding small projects proposed by academicians working in university/colleges in Goa, on projects which are specific to Goa. For bigger projects of general nature, the faculty members can approach the existing national funding agencies or NRF. The selection criteria for the projects to be sanctioned by the SRF-Goa should be: 1) They are specific to Goa, and 2) They are unlikely to get funded by the national funding agencies. As this body will fund research in all areas (unlike

the central government's area-specific funding agencies), one will have to have a large number of sub-committees of experts in various areas to sanction and monitor the project funding, coordinated by the SRF. Senior faculty members (working or superannuated) in Goa University, IIT-Goa, NIT-Goa, GCE (GEC?), GMC, NIO, colleges etc. could be given this responsibility, along with some well-known experts in Goa in the field of arts, culture and other areas. Such an SRF will boost research in Goa specific smaller projects, which presently cannot get funding from anywhere.

5.3 Funding by state government departments

SC4 also proposes that departments of the state government should continue and enlarge the present support they are providing towards research of interest to them. This research funding would form an alternative funding mechanism, in addition to the SRF-Goa, to academic researchers from the state.

5.4 Funding from non-government sources

While there is scope for state support for research, there should be an active encouragement to draw private contribution to furthering research funding in the state. One possibility that deserves attention is funding from private and public sector corporations under their Corporate Social Responsibility (CSR) programmes. If higher education institutions from the state develop good rapport with the corporations, there could be two benefits. One is funding for infrastructure development under CSR. Second, the rapport could lead to closer interaction with the instituions and the corporate world (including manufacturing units, laboratories, software development units, etc.). Such an interaction forms a hallmark of the NEP.

6. Desirable practices to encourage research

One specific recommendation of the NEP is "inclusion of research and internships in the undergraduate curriculum". The following are some thoughts concerning this recommendation.

6.1 Four-year undergraduate programmes

Undergraduate programme in arts/science/commerce streams at present is a 3-year programme with some scope for independent research in the form of a project. However, it is usually thought that the effort that goes into it is not enough to have sufficient impact envisioned in the NEP, which requires "….a definitive shifts ……. to a more play and discovery-based style of learning with emphasis on the scientific method and critical thinking".

Perhaps the proposed 4-year programme in arts/science/commerce offers an opportunity to move in the direction suggested in the NEP. The following suggestions are made keeping this opportunity in mind.

- While independent research project would lead to a dissertation, it is necessary to introduce courses that familiarize the student with topics such as the scientific method, critical thinking, statistical methods to support inferences, scientific ethics etc. These topics need to be formally introduced in the undergraduate curriculum (see Section 4).
- It is desirable to make the dissertation topic jell with internship that the NEP has strongly recommended. A challenge, of course, is to find enough placements for the interns. In view of this difficulty, the linkage between dissertation and internship need not be insisted on.
- The 4-year degree holder must go through the experience of an intern to give him/her first-hand experience of the real world. Internships are also known to enhance the chances of a student towards employment on graduation.
- The dissertation must be an individual effort, not of a team. The principle of "one student one dissertation" should be strictly followed.
- Every dissertation must meet the standards set to avoid plagiarism.
- The dissertation must become accessible online for anyone anywhere to examine.
- The dissertation research suggested above would mean a sizeable increase in quality of research undertaken in undergraduate teaching programmes. It can only be achieved if suitably trained faculty is available. Therefore, NEP recommends "faculty career management systems that give due weightage to research, and the governance and regulatory changes that encourage

The suggestions made above for undergraduate research are equally applicable to undergraduate education in professional courses. However, these courses come under the aegis of statutory councils (or their equivalent under the NEP).

6.2 Posgraduate programmes

The suggestions made above also should be adhered to in postgraduate, including doctoral research. In particular, the following three items should be followed: 1) courses to complement preparation of a student for research; 2) the principle of "one student one dissertation"; and, 3) online availability of all dissertations/theses.

6.3 Hackathons

Hackathons are well rooted in the Information & Communication Technology (ICT) disciplines, specially to engage people in collaborative computer programming and create functioning software or hardware by the end of the event. The SC4 recognizes the importance of collaborative effort and their outcome. However, taking a cue from ICT hackathons, SC4 strongly recommends that this activity could also be part of other disciplines. For example, the community in linguistics may come together to write collaborative poetry and the like. In science stream, the students and faculty from different colleges could come together to conduct experiements that are difficult or require special facilities. The institutions imparting programmes in respective disciplines are encouraged to come up with the specific ideas for hackathon in their disciplines and organize the event to boost collaborative effort.

7. Academia-Industry interaction

7.1 Introduction

Implementation of the programmes suggested above will require support from beyond the academic institutions. Industry support is therefore a necessity for dissertation research and internships. Yet another interaction could be in the form of a programme developed at the Birla

Institute of Technology and Science known as work integrated learning programme, wherein the university helps the industry in upgrading the knowledge level their manpower. We discuss these three items below.

7.2 Dissertation research

Implementation of the principle of one-student-one-dissertation will likely increase the number of dissertation supervisors needed in the state. The increase will depend on the number of students that opt for a 4-year undergraduate degree. It is, therefore, necessary to rope in the expertise available with the industry, business, and other establishments in the state. SC4 recommends the following steps to entrain these establishments into the arena of higher education in the state:

(1) Once the syllabus under the new 4-year undergraduate programme gets ready, and the parameters that define dissertation research are finalized, the state through DHE should make it known to potential industrial and business enterprises. It should also be made known that their association is necessary to make the implementation of the NEP successful.

(2) Involvement of organizations like Goa Chamber of Commerce & Industry (GCCI) and Confederation of Indian Industry (CII) could prove beneficial in preparing a database of people industrial and commercial enterprises who are willing and have the qualification to supervise dissertation research.

(3) Whenever need arises, faculty members should use the database to seek the services of people from industrial/commercial enterprises to guide dissertation research.

7.3 Internships

While at present the practice of internships does prevail in the state, the NEP intends to take the practice to a much higher echelon by making it a requirement for all graduates. This will be a massive task to start with. Again, involvement of organizations like GCCI, CII, and others will be necessary to make the programme of internships successful. Just like a database of potential dissertation supervisors, development of a database for possible internship placements is needed.

7.4 Work Integrated Learning Programmes

Some institutions in India have taken the idea of internships to a higher level making it an interactive programme between academia and industry. Birla Institute of Technology and Science (BITS) -Pilani, which has a campus in Goa, is one such institution. Their programme, named "Work Integrated Learning Programme" (WILP), differs from the industry internship programme. In the internship programme, students from universities spend time working at an industry for a semester or during summer vacation and get benefited from the practical industry experience they gain there. In the WILP, the industry benefits from academia by getting their human resources further trained to the latest ideas in the field of their work.

The *modus operandi* of a WILP programme is that an industry "A" approaches a university "B" for running a course(s) for upgrading the knowledge of some of their staff members in a particular field. A and B meet and discuss A's requirements. Accordingly, B designs suitable customised course(s) for the staff members of A to be trained. Depending on the number of staff members to be upgraded, it could be a one-time programme or a programme to be repeated for a few years. The course could be on-line or a classroom course, as per their mutual convenience. The responsibility of providing the infrastructure for conducting the program rests with the collaborating organisation (A) and not with the university (B) irrespective of whether the program conduct mode is online or in-class. Both parties sign an MoU and then the course is executed. After completion of the course, B awards degree, certificate etc. to the participant staff of A, who have successfully completed the training.

BITS has been offering such WILP courses to industry staff for many decades now. In Goa, in 2014, BITS organised an M.Tech. in Transportation Engineering for engineers of Goa government, Public Works Department. This course was on-line as the engineers preferred to take the course from their office at Panaji. As Goa campus does not have a civil engineering programme, the faculty members giving the course were from other campuses of BITS. The PWD staff were quite happy about the outcome of the course.

Another case related to Goa was M.Tech. in Environmental Engineering designed and run by BITS for two batches of employees of Goa State Pollution Control Board (GSPCB), first one in 2014 and the second one in 2018. Subsequently, this new course has been opened to individuals from government/industry, whose work is closely related to environmental engineering.

As BITS has been running its WILP successfully for several decades, their existing model could be used as a template by institutions in Goa as a part of the implementation of the NEP.

8. Inter-institution collaboration

A single institution cannot expect to acquire all the expertise needed to provide a well-rounded education of its students. This makes it necessary that an institution collaborates with other institutions. SC4 strongly encourages such collaborations and expects them to occur at three levels outlined below.

8.1 Intra-state collaboration

Goa now has an Indian Institute of Technology (IIT-Goa) and a National Institute of Technology (NIT-Goa), both supported by the Central government. BITS-Pilani is a respected private university which has a campus in Goa. There are also institutions like the National Institute of Oceanography (NIO) and National Centre for Polar and Ocean Research (NCPOR) with the mandate to lead a national effort in ocean and polar research, respectively. Central Coastal Agricultural Institute (CCAI) of the Indian Council for Agricultural Research (located at Old Goa) is engaged in agricultural research. Goa University is a nationally-ranked state university that caters to the research and educational needs of the state. It would benefit the educational institutions in Goa to develop strong ties with all these institutions to enlarge the diversity of exposure to students.

8.2 Inter-state collaboration

Similarly, every institution of higher learning should be encouraged to develop links with central and state research institutions and universities located in other states. There are several advanced research facilities funded by the Central government, which are available for users from any academic institute in India for free. For example, the synchrotron-based research facilities at the Raja Ramanna Centre for Advanced Technology at Indore, accelerator based research facilities at the Inter-Universities Consortium for Accelerators in New Delhi. Academic persons (students and faculty) in Goa also should use such advanced national facilities for enhancing the level of their experimental research.

8.3 Collaboration with institutions abroad

In addition to the collaboration with institutes/universities within the country, the Goa University and affiliated colleges should be encouraged to establish student exchange programmes with universities abroad or with their campuses in India (as under NEP, selected foreign universities in top 100 in the world lists will be now allowed to set up their campuses in India). Vibrant student exchange programmes help in giving the students better exposure to the world.

9. Recommendations under SC4's Terms of Reference

This section tabulates the recommendations of SC4 under each of its terms of reference (ToRs, Appendix A). In the process, the section provides a summary of the committee's recommendations. The table also comments on items that have not been discussed in the earlier sections, but find mention in the ToRs and were discussed by the committee.

Table 1: Summary of recommendations for each of Terms of Reference (ToR) (CHECK DR Naik's note for corrections)

S.no.	ToR	SC4 recommendation	Section for details
a	Possibilities of establishing State Research Foundation (SRF) in line with the National Research Foundation (NRF)	Establish a SRF (SRF-Goa) for the state.	5, 5.2, 5.3
b	Creating separate competitive funding opportunities for research in all disciplines	Support from government departments for research of their interest in colleges and university departments should continue. Create a State Fund to support research infrastructure development in colleges and university departments.	2.2, 5.1, 5.2, 5.3
c	Mechanism for developing effective academia-industry linkages for implementing Work Integrated Learning	Encourage the industry and business enterprises to accept student interns, supervise student dissertations, and develop Work Integrated Learning Programmes (WILP) Create a database of industry staff members interested and qualified to guide student dissertation research. Create a database of industries, business establishments and other organisations interested in offering student internships. Both databases should be created using the services of organisations like GCCI, CII, etc.	7 (7.2, 7.3, 7.4)
d	Possibilities of setting up Incubation Centers (for different specialisations)	Incubation centres are best fitted for institutions with professional education programmes. SC4 thought it appropriate to take suggestions from the	

		committee meant for the Professional education on this aspect.	
e	Steps to encourage teaching faculty to obtain patents	Encourage patenting after careful evaluation of its commercial potential. Else, the maintenance of patents could drain institutional resources.	
f	Possibility of setting up Central Instrumentation Hub	Set up central instrumentation facility for sophisticated instruments. It could be located at the Goa University, which has similar facilities. Smaller versions of such instrumentation hubs having less costly equipment should also be set up in clusters of colleges in different parts of the state.	4, (4.3), 5
g	Creating High-quality Infrastructure for Research & Innovation at the UG level	Set up a State Fund for development of research infrastructure for research (laboratories, library facilities, internet connectivity, etc.) with special attention to the needs of undergraduate research.	4, (4.2)
h	Possibility of launching State Hackathon in Software & Hardware categories for students	Encourage Hackathons only in hardware and software and expand the idea behind hackathons to other fields.	6.3
i	Research & Teaching collaborations with High-quality foreign Institutions	Encourage collaboration at intra-state, inter-state, and international levels between colleges and university departments of the state with the following: 1) *Intra-State:* academic and research institutions such as GU, IIT, NIT, BITS, NIO, NCPOR, etc. 2) *Inter-State:* highly reputed institutions located in other states. 3) *International*: Global reputed institutions, in particular through student exchange programmes.	8.1, 8.2, 8.3
j	Any other matter deemed fit by the committee	Make student dissertation research the core of research in the state institutions (colleges and Goa University) at undergraduate, post-graduate, and doctoral research. All dissertations, starting with 4th year undergraduate dissertations, should be independent single student dissertations. All dissertations should be accessible via the internet.	6

Appendix A

Government of Goa
DIRECTORATE OF HIGHER EDUCATION
SCERT, Alto- Porvorim-Goa PIN 403 521

Tel: 2415585/2410824 Email: dir-dhe.goa@nic.in
No **ACAD-II/New Education Policy: HE/80/DHE/2020/** 3741 Dated: **07/10/2020**

ORDER

Sub-Committees for the Implementation of NEP 2020 at State Level

The first Committee meeting to examine the National Education Policy – 2020 and to prepare the Policy and Roadmap for the State of Goa at Higher Education level held on 30th September 2020 constituted the following sub-committees.

The sub-committees may meet and submit the detailed roadmap for the implementation of the National Education Policy 2020 at the Higher Education level for the State of Goa.

I. Restructuring & Consolidation – The Committee shall deal with Clauses 10, 11, 12 & 23)

1. Prof Varun Sahni	Chairperson
2. Dr. Vikas Pissurlekar	Convenor
3. Dr. Vivek Kamat	Member
4. Dr. Ramesh V. Gaonkar	Member
5. Dr. Anil S Dinge	Member
6. Mr. Datta B. Naik	Member

The following are the Terms of Reference of the Sub-Committee:

a) Restructuring of existing institutions as per NEP
b) Mapping the Existing Courses and Programmes
c) Identifying the New Programmes to be introduced and New Institutions to be established
d) Inputs on the development of Curriculum, Evaluation, Pedagogy & Course Structure
e) Procedures and Mechanism for Graded Autonomy
f) Framework for creating Constituent Colleges
g) Mechanism for attracting at least one High-Quality Institution to the State
h) Mechanism for Mentoring at least one HEI in Goa to open Campuses in foreign countries
i) Mechanism for Creating Higher Education Clusters and Knowledge Hubs
j) Creating Multidisciplinary Higher Education System

k) Possibilities of offering PhD and Masters Programme in cutting edge technologies like AI, Machine Learning, Big Data, Cloud Computing, 3D Technologies, Nanotechnology, etc.
l) Establishment of MERUs (Model Public Universities/Colleges)
m) Creation of Academic Bank of Credit
n) Discontinuation of M.Phil.
o) Implementing the multiple exit options and certification for UG & PG Programmes
p) Possibility of introducing Programmes in Translation & Interpretation, Art & Museum Administration, Archeology, etc
q) Any other matter deemed fit by the committee.

Professional Education – The Committee shall deal with Clauses 15 & 20

1.	Dr B K. Mishra	Chairperson
2.	Dr. Kripashankara M. S.	Convenor
3.	Dr. Wiseman Pinto	Member
4.	Vaidya Upendra Dikshit	Member
5.	Dr. Jayant Umarye	Member
6.	Dr. Suresh Kunkalekar	Member
7.	Mr. Sudesh N. Gaude	Member
8.	Prof. V. N. Jindal	Member

The following are the Terms of Reference of the Sub-Committee

a) Integrating Professional Education into Higher Education System
b) Procedures for converting the existing Standalone Institutions into Multidisciplinary Institutions
c) Reviving Agriculture Education and other Disciplines in Goa
d) Setting up of Agri-Techno Park
e) Making Legal Education Globally Competitive
f) Revising the Curriculum of Legal Education to reflect the Socio-Cultural realities of the Society.
g) Explore the possibility of offering bilingual Legal Education
h) Revising the Duration, Structure and Design of Healthcare Education
i) Promoting Preventive Health Care and Community Medicine
j) Technical Education to employ Multidisciplinary Approach
k) Promoting Collaboration with Industry for Innovation & Research
l) Formalities for attracting Skilled Faculty from Industry
m) Strategies for incorporating AI, 3D Machining, Big Data, Machine Learning, Biotechnology, Neuro-Science, Nanotechnology, etc. at the Under Graduate Level
n) Mechanism for making Teacher Education in Multidisciplinary perspective
o) Procedures for recruiting Faculty with outstanding teaching and field experience in TEI
p) Teaching Assistantship to PhD Students and related issues
q) Formalities for creating a pool of outstanding senior and Retired Faculty as mentors at the State level
r) Any other matter deemed fit by the committee.

III. Vocational Education – The Committee shall deal with Clause 16

1. Dr. Ajit Parulekar	Chairperson
2. Dr. Radhika Nayak	Convenor
3. Dr. Fr. Walter de Sa	Member
4. Dr. Rajan Mathew	Member
5. Prof. Madhav S. Kamat	Member

The following are the Terms of Reference of the Sub-Committee

a) Providing Mechanism for Vertical Mobility for Standard 12 Students
b) Integrating Vocational Education into Mainstream Higher education
c) Ensuring Vocational Programmes to all students of Bachelors Programmes
d) NSQF Framework for all Short term Certificate Courses
e) Conducting Skill-Gap Analysis & Mapping Local Opportunities.
f) Any other matter deemed fit by the committee.

IV. Research, Innovation & Linkages with Industry – The Committee shall deal with Clauses 11,16,17 & 20

1. Dr. Satish Shetye	Chairperson
2. Dr. Pranab Mukhopadhyay	Convenor
3. Dr. Prasad Naik	Member
4. Dr. P. R. Pednekar	Member
5. Dr. Murari Tapaswi	Member
6. Dr Sarvesh Sawant	Member

The following are the Terms of Reference of the Sub-Committee

a) Possibilities of establishing State Research Foundation in line with National Research Foundation
b) Creating separate competitive funding opportunities for research in all disciplines
c) Mechanism for developing effective academia-industry linkages for implementing Work Integrated Learning
d) Possibilities of setting up Incubation Centers (for different specializations)
e) Steps to encourage teaching faculty obtain patents
f) Possibility of setting up Central Instrumentation Hub
g) Creating High-Quality Infrastructure for Research & Innovation at UG level
h) Possibility of launching State Hackathon in Software & Hardware Categories for students
i) Research & teaching Collaborations with High-Quality Foreign Institutions
j) Any other matter deemed fit by the committee

V. Educational Technology, ODL & Learning platform – The Committee shall deal with Clauses 10 & 21

1. Prof. Gopal Mugeraya	Chairperson
2. Dr. M.K. Janarthanam	Convenor
3. Dr. Erwin D'Sa	Member
4. Dr. Sanjay S. Desai	Member
5. Dr. Bhushan Bhave	Member
6. Dr. Aparna Patil	Member

The following are the Terms of Reference of the Sub-Committee

a) Explore the possibility of Open Distance Learning (ODL) in the State
b) Possibilities of creating Adult Education Centers in HEIs
c) Creating State Educational Technology Forum in line with National Educational Technology Forum (NETF)
d) Possibilities of exploiting the power of AI in Higher Education
e) Ways to Reduce the Digital Divide in the campuses for ensuring equity and inclusive Higher Education
f) Encouraging Faculty to develop courses under MOOCs
g) Online Assessment & Examination
h) Incentive for teachers integrating technology in Teaching
i) Possibilities of establishing Virtual Labs through CRS funding
j) Strengthening Content Creation, Digital Repository and Dissemination
k) Ensuring Digital Infrastructure for both teachers and learners
l) Any other matter deemed fit by the committee

All the sub-committees shall submit their reports by 30th November 2020.

Prasad Lolayekar
Director of Higher Education &
Member Secretary of the Committee
for National Education Policy - 2020
for Higher Education at State level

REIMAGINING VOCATIONAL EDUCATION IN GOA

[Report of the sub-committee chaired by Prof. Ajit Parulekar with the members i) M. S. Kamat ii) Prof. Radhika Nayak iii) Rajan Mathew and iv) Fr. Walter De Sa]

What is Vocational Education?

As per the All India Council for Technical Education (AICTE) "Vocational education or Vocational Education and Training (VET), also called Career and Technical Education (CTE), prepares learners for jobs that are based in manual or practical activities, traditionally non-academic and totally related to a specific trade, occupation or vocation, hence theterm, in which the learner participates. It is sometimes referred to as technical education, as the learner directly develops expertise in a particular group of techniques or technology."

Vocational Education Vs Higher Education

Vocational Education is very often classified as teaching procedural knowledge as against Higher Education, known as declarative knowledge which mostly concentrates on theory and abstract conceptual knowledge and is termed commonly as "mainstream" education.

It is observed that from early on, children are conditioned to pursuing education as a natural progression rather than making careers in areas of their respective interests or specific abilities.

Vocational Education is hardly ever considered a form of higher education, rather they both operate as separate verticals with little or no interaction between the two, so much so that there is a perceptible hesitation among youth to opt for vocational education as that would imply that avenues of acquiring higher qualifications and degrees would be precluded for them. In fact, right up till the end of the last century vocational education was seen to focus on specific trades such as an automobile mechanic, welder or plumber and therefore was associated with the lower strata of society as against the entrenched mindset that university degree holders alone drove the economy. Urban middle class parents are even known to feel that a child not attending university is actually their failure.

Not surprising then that only 5% Indian workforce received formal vocational education as compared to 52% in US, 75% in Germany and 96% in South Korea. It is only the emergence of a "skills gap" across the industrialized world that has rekindled interest in vocational education. Vocational education has begun to focus itself on skill gap analysis and mapping of local opportunities.

The New Education Policy 2020 recognizes theneed to overcome the social "status/hierarchy" associated with the vocational education vis-à-vis higher education. It also propagates integration and mobility between vocational education and 'mainstream education'. Under the NEP 2020, Higher Education institutions will offer vocational courses to other bachelor programs too, i.e. it shall set the course for "vocationalization" of higher education. Higher Education institutions will

also be expected to experiment with different models of delivery of vocational education and training.

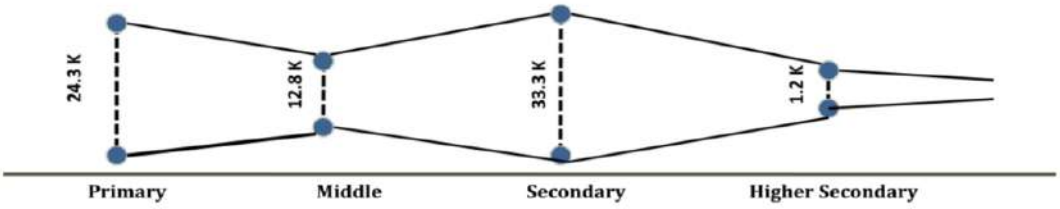
Education, Vocational Education & Higher Education in Goa

The National Skills Development Corporation (NSDC) commissioned a 'skills gap study' of Goa. This section is based on findings from this study.

Understanding Drop-out rate from school:

Goa has a high drop-out rate from school, especially at Secondary and Primary school.

Fig 1: Number of drop-outs at various schooling levels



Source: Goa Education Statistics – 2011-12, Directorate of Education, Goa Government

Table 1 details the state and district wise enrolments of students at different levels starting from primary school up to undergraduate and includes enrolments in formal vocational education. These data points are in line with the drop rate at different levels during schooling and also highlight that high-school, only about 50% students continue to study either in higher education (approximately 28,000 students) or in vocational education & training (approx. 3,300 students).

Table 1: Enrolments from primary school to higher education (State & District-wise for Goa)

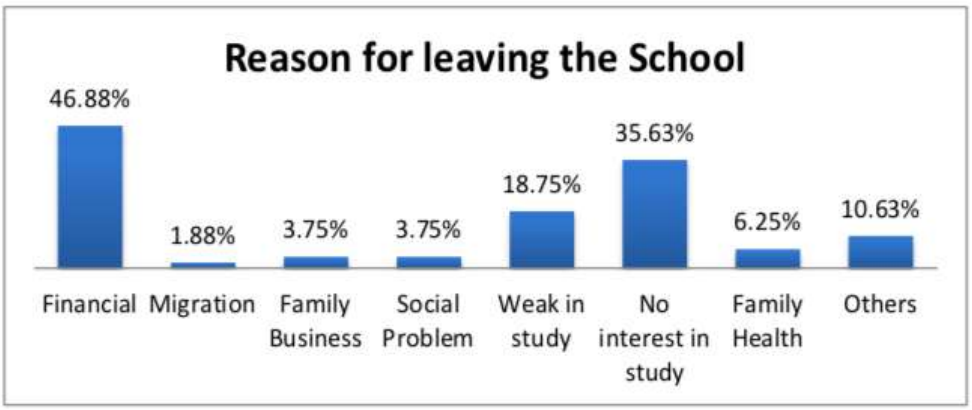
	Total		North Goa		South Goa	
Institution	Number	Enrolment	Number	Enrolment	Number	Enrolment
Primary School	1227	100206	734	53578	493	46628
Middle School	444	75863	262	41540	182	34323
High School	380	63055	221	34901	159	28154
Higher Secondary School	86	29762	51	16342	35	13420
Colleges of Non-Technical Courses	72	16872	39	8925	33	7947
Polytechnics and other Diploma level colleges	10	3652	5	1937	5	1715
Colleges of Professional Course	29	4031	23	3271	6	760
ITI/ITC and other related training Institutes	70	3294	45	2719	25	1327
Government ITI	10	3085	6	1967	4	1118
Institutions	54	963	36	752	18	209
Private ITI	6	-	3	-	3	-

Source: District Wise Skill Gap Report for the State of Goa (2012-17 to 2017-22); NSDC

Reasons from dropping out of school:

The report also dwells into the reasons for dropping out at the level of school as well as dropping out at the SSCE & HSSCE equivalent levels. Figures 2 & 3 present the reasons for leaving school.

Fig 2: Reason for leaving (drop-out) from school prior to standard 10th

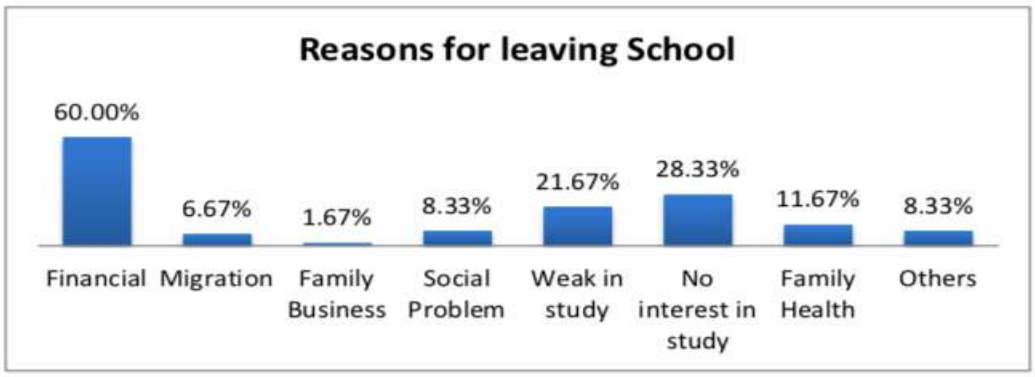


Here, others include other family problems like no parents, family responsibility etc.

So

urce: District Wise Skill Gap Report for the State of Goa (2012-17 to 2017-22); NSDC

Fig 3: Reason for leaving (drop-out) from school after standards 10th and 12th



Source: District Wise Skill Gap Report for the State of Goa (2012-17 to 2017-22); NSDC

The reasons for dropping out of school are similar at both the levels and the top 3 reasons are:

- Financial (46.88% during school, 60 % after 10th& 12th)
- No interest in study (35.63% during school, 28.33% after 10th& 12th)
- Weak in study (18.75% during school, 21.67% after 10th& 12th)

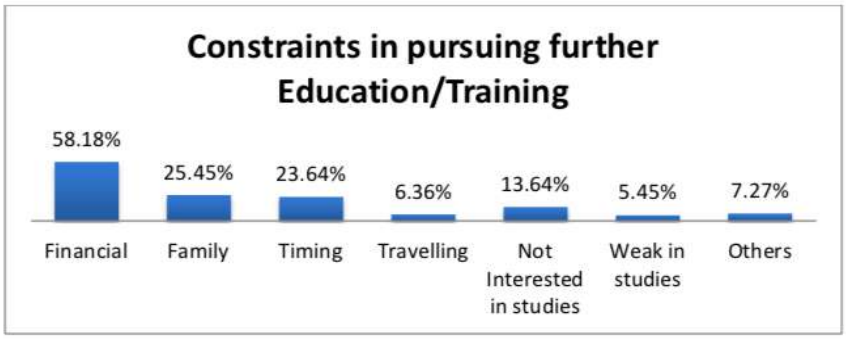
This points to 2 challenges that need to be addressed:

a) Addressing financial constraints that compel students to drop out of formal education. These could be in 2 forms – opportunity cost of time wherein the time in school is perceived as time away from earning money; and the other is the direct & indirect cost of education including fees, books, bags, etc.
b) Students dropping out either because they cannot cope up with the academic requirements and/ or because they do not have an interest in formal school education and may be interested in other vocations/ careers not part of the schooling system.

<u>Constraints in pursuing further Education/ Training:</u>

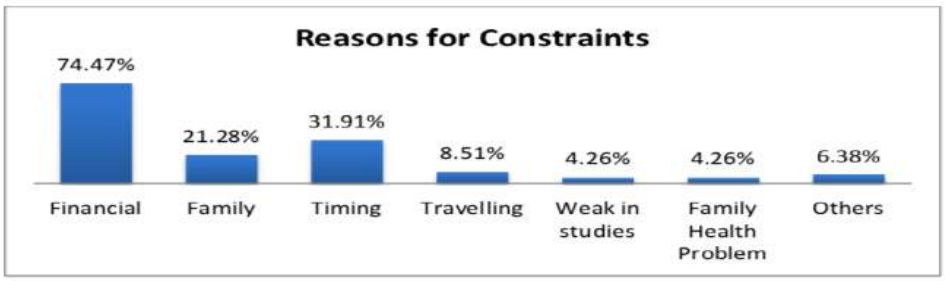
One of the objectives of NEP 2020 is increasing gross enrolment ratio (GER) in higher education from the existing 26% to 50% by 2030. This would necessitate not just reducing drop-outs from the schooling and broader existing education system but would also include bringing back the drop-outs to pursue further education and training – both vocational as well as higher education as currently defined. The drop-outs cited the constraints they faced in pursuing further education. These are presented in figures 3 (responses from drop-outs prior to standard 10) & 4 (drop outs at standard 10 & 12).

Fig 3: Constraints cited by drop-outs from school prior to standard 10th in pursuing further education



Source: District Wise Skill Gap Report for the State of Goa (2012-17 to 2017-22); NSDC

Fig 4: Constraints cited by drop-outs from school after standards 10th and 12th in pursuing further education



Source: District Wise Skill Gap Report for the State of Goa (2012-17 to 2017-22); NSDC

The top 3 constraints in Pursuing Formal Education were:

- Financial (74.47% during school, 58.18% after 10th& 12th)
- Family (25.45% during school, 21.28% after 10th& 12th)
- Timing (23.64% during school, 31.91% after 10th& 12th)

Once again the top constraint in pursuing formal education is financial, followed by family and timing.

Status of Vocational Education in Goa

Goa has 10 state run I.T.I's having a total capacity of approximately 3000. In addition there are 4 private I.T.Iswith a total capacity of 400 students.A special "Centre of Excellence" institute for vocational training has been established characterized by close links between institutes, various training agencies/ providers, companies that are potential recruiters or providers of internships, other employment interests and communities. The centre focuses on enhancement of skills and careers of those already in the work, enhancing the employability of new entrants to the labour market, and also the enhancing the employment prospects of those seeking employment (including self- employment).

In addition to the ITIs, the Directorate of Craftsman Training encourages various institutes that run courses which are not NCVT (National Council for Vocational Training) certified, to step forward and get themselves registered under Human Resource Development Fund (HRDF) society. The HRDF

society has several courses of 6 months and one-year duration that are affiliated to them and the HRDF conducts certification exams and awards qualification certificates.

Presentlyin Goa there are 15 vocational courses which are offeredby 45 higher secondary schools with student strength of a minimum 20 for commerce based course and 15 for agriculture based, home science based and technical based courses. Permissions have been granted for commencement of additional sections in the CRM course to 5 higher secondary schools in the state.

Also, various private organizations are offering vocational education programs in Goa. Sesa Goa established and operates its own Private ITI. The Travel & Tourism Association of Goa (TTAG) has plans to conduct severalvocational courses related to the Hospitality sector. TTAGis also contemplating establishment up of a full-fledged Hospitality Institute. Smart Edusol has also been running a private vocational training institute in Hospitality space and the Goa Mineral Ore Exporters' Association (GMOEA) has partnered with the Dr. Reddy's Foundation to offer Vocational Training to those out of jobs from the mining sector due to the mining ban and to seek alternative employment for them.

There are approximately 14,800 ITIs in India, 2.3 Million ITI trainees and 187,000 apprentices. Compared to the 'mainstream' higher education, these numbers are very small. The above numbers are from the Director General of Training website.

Source: www.dget.nic.in

The NSDC report had the following findings about vocational education and training in Goa:

- Feedback from industry opined that they found the ITI trained students had sound theoretical foundations but lacked a practical orientation

Importance of Vocational Education: Individual, Economic & Social

Vocational Education & Training serves a 3 fold purpose:

Firstly, it promotes Individual Development in terms of acquiring valuable skills. Acquiring these occupational skills empowers these individuals to work in their fieldsof interest and theirSkills profile make these trained workers occupationally and geographically more mobile. This requires several issues to be addressed including making skill development accessible, relevant and desirable by the aspirants.

Secondly, Vocational education serves to increase economic productivity by developing a skilled labor force, who can promote & foster innovation in business. Of course, this is incumbent upon the employability of this labor force necessitating a match up of skills possessed/ taught with skills required in businesses in the targeted markets.

Finally, Vocational education enhances social integration (especially of drop-outs from mainstream education) by empowering the lower social stratas normally associated with vocational education. In the longer term, it is desirable to break-away from the social hierarchy differences between higher education and vocational education so that choice of educational stream is driven by interest and ability rather than social pressures.

Thus,vocational education benefits the state, industry,the business community, young people and parents.

Issues in Vocational Education in context of the aspirations of NEP 2020

a) Bringing the high percentage of school drop-outs back into education

One of the main issues in reaping the benefits of vocational education in Goa as envisaged in NEP 2020 is that the highest percentage of school drop-outs are at the level of High School and Primary school(& not Higher Secondary). While in NEP 2020, Vocational Education & Training is targeted only at Secondary & Higher Secondary levels.

b) Addressing the Financial constraints issue

The main reason for dropping out of school are financial. This is also the main constraint why school drop-outs do not pursue education. This being the most important factor for drop-out and enrolment, the vocational (and higher education) streams need to address this issue through earn-while-you-learn schemes like paid apprenticeships.

c) Avenues for vertical progression

Another important concern is that despite the introduction of the B. Voc course, there is no vertical progression available to Vocational Education students in their chosen professions (especially for those without +2 completion).Higher Education Institutions currently do not offer Vocational Courses on Bachelor degree programs (other than the B Voc) and have no mobility for ITI students to integrate into 'mainstream' education.

d) Low enrolment in Vocational Education

It is also pertinent to note that the enrollment in Vocational Education in Goa is about 3300 as against 24,500 enrolled in Higher Education.The situation is further aggravated when one considers that the NSDC skills gap study found ITI students inadequate in terms of practical skills.

e) Social status of vocational education (& training)

VET is perceived by society to be inferior to 'mainstream' education meant for students who cannot cope & this reinforces the social hierarchy. The NSDC report also cites family as one of the important constraints drop-outs cite of not pursuing education post drop-out.

Way forward: Addressing Issues

I.Increasing GER and addressing problems of drop out.

NEP 2020 envisions increasing GER to 50% (including VET & HE). In order to realize this, it is suggested that Drop-outs need to be re-absorbed into the system using the following:

a) Strong apprenticeships (earn-while-you-learn) as an important component of vocational education & training considering that Financial constraints is the highest cited reason for drop-outs from formal education

b) Addressing the problem of Drop-outs due to 'No interest in study' and 'Weak in study' through 2 interventions:i) Students interested in particular vocations such as tailoring, welding, carpentry, surgery technician, fitter etc are identified early, are counseled and get an opportunity to pursue the chosen vocation and ii) Pathways to be provided (through credit & qualification framework requirement fulfillment) for opportunities of vertical and & horizontal progression.

II. Enhancing perceived value in VET

It is important that Drop-outs need to see value in pursuing a formal vocational (certification or diploma or degree) program as the primary reason for not pursuing vocational/ higher education has been cited to be financial. This includes the opportunity cost of their time (to earn a livelihood) as well as expenses of a formal education (fees & incidental costs). Short term certifications can offer avenues to well payingjobs and sometimes even longer term lucrative careers.

The other major reason cited for dropping out are family pressures (which needs longer term change in terms of 'social status/ stigma' of vocational education) and also timing of the programs (multiple entry & exit options need to be provided with a system of credentialing supporting these entry and exits).

It is important that the Vocational education is pursued not only from those who got wrongly steered to mainstream higher education/ university, but should also attract and benefit young people who gave up on education past high school because university style education did not interest them.

III. EMPLOYABILITY: Enabling dual Vocational Education and Training (VET) – Knowledge & Practice

A survey conducted by NSDC found ITI students inadequate in terms of practical skills, thus building up a case for the need to have a strong apprenticeship program as part of the ITI program.

Germany for instance, has a strong 'dual' system of a well established paid work based apprenticeship' component and a mandated school based knowledge/ theory component to VET.

The "Dual principle" can mean several things and applies to the integration of theory and practice, as well as thinking and acting, and also to systematic and case-based learning. It is recommended that dual training programs should be introduced first in industriesor business sectors where conditions are favourable.

It is also recommended that Vocational courses should be need based and relevant to the locality of the college. In Goa, courses (short term certifications with vertical mobility options to graduate to Bachelors, Masters & even Doctoral degrees) relevant to local industry such as pharmaceutical technicians, tourist guides, pisciculture as well as more generalized vocations such as carpentry, plumbing, electricians, fitters etc. could be introduced.

Vocationalisation of higher education courses by aligning them to specific vocations along with apprenticeships is therefore the need of the hour.

IV. Enabling Academic Progression

The NSQF (National Skills Qualification Framework) has used universally accepted theoretical principles of:

a) Making qualifications more understandable & transparent

b) increasing the relevance and flexibility of education and training programs

c) easing recognition of prior learning

d) improving the transparency of qualification systems

e) creating possibilities for credit accumulation and transfer,

The Goa Board of Secondary & Higher Secondary offers Vocational Courses for Std XI & XII; these courses are terminal per se. However, if the students on completing successfully these courses, wish to pursue degree programmes, they should be provided vertical mobility (well defined pathways) in the chosen vocations.

It is imperative that Goa University, Directorate of Higher Education and Directorate of Technical Education need to draw up plans for integration of vocational & general education courses.

V. Social Status of Vocational Education

Concerns of social status associated to VET shall over a long period (target year – 2030) be addressed by introduction of a compulsory vocational course for all students at school level (as envisioned in NEP20) as well as introduction of vocational courses in higher education (Bachelors other than B Voc).

Enabling mobility and integration between Vocational Education and Higher Education will also reduce barriers akin to the progression that has been made possible for polytechnic students pursuing degree programs.

Credentialing (credit definition and allocation, formal certifications, assessments by Skills Councils, Portability and Recognition of Credentials including aligning National Credentials with International standards) would also increase acceptance and thereby overcome, at least partly, the social barriers.

Recommendations Summary

- Making VET relevant to industry needs and an attractive option of learning.
- Broadening accessibility to VET to include early school drop-outs and to include skilling & re-skilling across older age groups.
- Making the system more flexible through a strong credentialing system allowing for multiple entry, exit and recognition/ certification windows/ options.
- Creating pathways from VET to Higher Education & the other way around.
- Establishing work-based learning through apprenticeships thereby overcoming financial barriers as well as increasing employability.
- Building in cross-border mobility by aligning qualifications (credits, credentials etc) in line with international systems.
- Skill missions of the states should be in the advisory role in identifying vocations and trades around which suitable B.Voc. or Diploma programmes can be initiated in a particular region.
- Region specific content should also be made available (including online) in the regional language to encourage learning.

Concerns in implementation of NEP 2020 in Goa

One of the important concerns in the implementation of NEP 2020 in Goa is ensuring Synergy/ Continuity across the various levels of training namely; Schools, Higher Secondary Schools and Colleges.

NEP 2020 has envisioned initiatives of VET at a variety of levels for vocational education & training including:

- Incorporation of Vocational subjects/ education in schools
- Incorporating vocational education/ courses at Bachelors other than B Voc
- Changes to be incorporated at the level of ITIs, HRDF, NSDC and other institutions concerned with vocational education
- Integration & mobilitybetween Vocational & Higher Education

As the above initiatives involve different organizations (both at policy/ curriculum development as well as other institutions for implementation) at different levels (school, higher secondary, vocational & higher education); there needs to be synergy and consistency among each of these levels so that learners have smooth continuity across levels during their education.

Bibliography

1. *AICTE website, last accessed 20Nov'20;*
2. *5Differences Between Vocational Education And Higher Education, www.darlohighereducation.com; last accessed 20Nov'20;*
3. *Hoelscher et al (2008) The Transition from Vocational Education and Training to Higher Education: A successful pathway', Res Papers in Edn 23 (2).*
4. *National Education Policy 2020, GoI; 'Reimagining Vocational Education', pg 43-45.*
5. *District Wise Skill Gap Report for the State of Goa (2012-17 to 2017-22); NSDC.*
6. *www.dget.nic.in website; last accessed 20th Nov 2020*
7. *Euler Dieter, Germany's dual vocational training system: a model for other countries. Bertelsmann Stiftung.*