ODISHA CURRICULUM FRAMEWORK FOR SCHOOL EDUCATION 2025

Developed by :

Directorate of Teacher Education and SCERT,
Odisha, Bhubaneswar

MOHAN CHARAN MAJHI
CHIEF MINISTER, ODISHA

LOKASEVA BHAVAN
BHUBANESWAR

MESSAGE

I am pleased to note that the Odisha Curriculum Framework (OCF) for School Education 2025 has been meticulously developed, ensuring a strong alignment with the vision and guiding principles of the National Curriculum Frameworks formulated by the Ministry of Education, Government of India. This alignment not only serves as a testament to the credibility and robustness of the OCF but also instills confidence in its effectiveness.

Education is the cornerstone of a progressive and equitable society. Our commitment to nurturing a learning ecosystem that is inclusive, equitable, and rooted in our cultural values is a source of pride. We are equipping our children with the knowledge, skills, and dispositions required for the 21st century, and the OCF reflects this commitment by integrating child-centric, activity-based, and competency-focused approaches into our school education system.

This framework is the result of a collective effort, a testament to the dedication and expertise of educationists, subject experts, and stakeholders from across the state, as well as a few national-level experts. Your contributions have been invaluable, and I extend my heartfelt appreciation to all who have been part of this important task. The implementation of the OCF will pave the way for joyful learning, deeper understanding, and holistic development of our children.

Let us move forward together, reaffirming our unwavering commitment to build a future where every child in Odisha has not just access to education, but access to quality education. This is our shared goal, and together, we can ensure every child has the opportunity to thrive.

(MOHAN CHARAN MAJHI)

Phone : Office : 0674-2531100, 2531500, 2535100 (Fax)

धर्मेन्द्र प्रधान
ଧର୍ମେନ୍ଦ୍ର ପ୍ରଧାନ
Dharmendra Pradhan

शिक्षा मंत्री
भारत सरकार
Minister of Education
Government of India

MESSAGE

I am happy to know that the Department of School and Mass Education, Government of Odisha has developed the State Curriculum Framework (SCF) for School Education, in alignment with the National Education Policy (NEP) 2020 and the National Curriculum Frameworks (NCFs) and the same is being rolled out. This significant step reflects the State's unwavering commitment to transforming school education by placing learners at the centre, promoting holistic development and integrating local context with national aspirations. The SCF, I believe, is not just a document but a credible roadmap that will guide the educators, institutions and the policy makers in shaping a future-ready, inclusive and equitable education system in Odisha.

The Odisha Curriculum Framework for School Education thoughtfully reflects the State's rich cultural heritage, linguistic diversity, and unique local context, while resonating deeply with the goals of NEP-2020. The Curriculum Framework with its emphasis on foundational literacy and numeracy, experiential learning, mother tongue-based education and integration of arts, sports and vocational education, alongside innovative assessment methods, I am sure, will go a long way in empowering the young learners to grow as confident, creative, and socially responsible citizens.

May this endeavour pave the way for a brighter educational future of every child in the State and serve as a model for others to follow. I extend my best wishes for the successful implementation of the Odisha Curriculum Framework for School Education.

(Dharmendra Pradhan)

MOE - Room No. 301, 'C' Wing, 3rd Floor, Shastri Bhavan, New Delhi-110 001, Phone : 91-11-23782387, Fax : 91-11-23382365
E-mail : minister.sm@gov.in

SHRI NITYANANDA GOND
MINISTER
School & Mass Education, S.T. & S.C. Development, Minorities & Backward Classes Welfare and Social Security & Empowerment of Persons with Disabilities, Odisha

Office Tel. No.: 0674-2536910
BHUBANESWAR
Date: 02.09.2025

MESSAGE

It gives me immense satisfaction to see the Odisha Curriculum Framework (OCF) for School Education 2025 take shape as a guiding document for transforming learning experiences in our schools. This state-level framework, anchored in the vision of the National Education Policy 2020 and the National Curriculum Frameworks developed by the Ministry of Education, is a testament to the collective efforts of Odisha's education community. It reflects our shared resolve to offer meaningful, inclusive, and future-ready education to every child.

The OCF is not just a document-it is a roadmap for nurturing creativity, critical thinking, and compassion among our students. It proudly and actively celebrates our rich local heritage, culture, and language, instilling a deep sense of pride and connection in our students, while also opening windows to global perspectives. By embracing foundational learning, mother-tongue based education, experiential pedagogies, and equity-focused practices, the framework ensures that no child is left behind in the journey of learning.

I commend the dedicated efforts of the School and Mass Education Department, educationists, and all stakeholders who have contributed to this important endeavour. Your contributions are invaluable. As we implement this framework across the state, your role becomes even more crucial. Let us work together to create classrooms where every child learns with joy, grows with confidence, and dreams without limits.

(NITYANANDA GOND)

From the Chair

The National Education Policy 2020 (NEP 2020) envisions a system of education rooted in Indian ethos, which will contribute in transforming India into an equitable and vibrant knowledge society, aspiring for India to become a knowledge super power. In order to fulfil the vision of this policy, there is an urgent need of bringing about a change not only in curriculum, pedagogy and the process of assessment, but also in school culture and process. It implies a shift in our focus from cognitive to affective and psycho-motor domain of the personality, which will facilitate in developing good human being, and contribute to creating an equitable and vibrant knowledge society.

With a view to implement the recommendations of the policy at the school level across the States and Union Territories of the country, the Government of India brought out two National Curriculum Frameworks: National Curriculum Frameworks for Foundational Stage, 2022 (NCF-FS 2022); and National Curriculum Frameworks for School Education, 2023 (NCF-SE 2023), aligned with the vision of NEP 2020. The Odisha Curriculum Framework for School Education, 2025 (OCF-SE, 2025) is the continuation of these national initiatives.

The actual process of development of OCF-SE, 2025 began with the organization of a two-day National Workshop for Preparation of a Roadmap for Implementation of NEP 2020 in Odisha followed by formation of a 19-member Steering Committee dedicated to the development of OCF-SE. The committee was supported by 10 groups of subject experts constituted by the Directorate of Teacher Education and SCERT, Odisha for writing contents related to school subjects. The committee held a series of workshops for preparing the draft OCF, which was submitted to the NCERT, New Delhi for vetting. The vetted OCF was submitted to the Department of School and Mass Education, Government of Odisha for approval.

The OCF-SE, 2025 suggests a roadmap for several major changes in the school education system in Odisha including a shift in its curricular and pedagogical structure from 10+2 to 5+3+3+4 pattern, starting with a new Foundational Stage to a revised Secondary Stage. It calls for a paradigm shift in pedagogical processes in favor of Competency-Based Learning to enrich knowledge, capacities, values and dispositions to meet the challenges of the 21st century. For this, it demands new contents in the form of curriculum, syllabus and new learning-teaching materials, including textbooks.

The OCF-SE, 2025 looks for the teacher, who is professionally well trained to facilitate the desired learning processes in each stage. It plans for the schools to stay connected to each other at School Clusters/Complexes and share resources, including human, financial, and material. The new textbooks and other TLMs would carry contextually rooted contents, which are just enough to provide learning experiences to students with reduced burden. The pedagogies proposed for different curricular areas, on one hand, are based on the research-based learning theories and, on the other, are aligned with the Indian concept of *Pancha Koshas* and pedagogical principles of *Panchapadi* to prepare students to address the challenges of the 21st Century *Bharat*.

OCF-SE, 2025 recommends a learning friendly system within the framework of the NEP, 2020 to enable students to choose subjects of their choice and combination so that each student takes proper interest in the subjects and acquires the desired competencies using all learning resources, including course books, and other resources available on digital mode. Students of Odisha, growing on a rich educational foundation, aspire for their dream careers, moving away from the narrow colonial adjustments to a democratic environment to demonstrate their skills powerfully.

The members of State Steering Committee, members from the SCERT, Odisha, the faculty members from the Regional Institute of Education, NCERT, Bhubaneswar and different DIETs of the state and some practicing teachers, have put hard efforts to weave these pages of OCF-SE, 2025 using all available resources from the Ministry of Education, NCERT, recommendations of the National Consultations held in January on NEP implementation, and insightful feedback received from the important stakeholders.

We are thankful to the State authorities including the Secretary, Department of School and Mass Education, for extending desired support to the committee, from time to time, for timely completion of the task.

We sincerely wish, this OCF-SE, 2025 turns out to be useful in implementing systemic reforms, development of learning-teaching materials, human resource preparation, and curriculum renewal in the State for a better future of students in Odisha.

Nityananda Pradhan
Chairman
Odisha Curriculum Framework for School Education, 2025

Acronyms

S. No.	Acronym	Full Form
1.	AAC	Alternative Academic Calendar
2.	AI	Artificial Intelligence
3.	AIL	Art Integrated Learning
4.	APAAR	Automated Permanent Academic Account Registry
5.	AR	Augmented Reality
6.	ATLs	Atal Tinkering Labs
7.	BEOs	Block Education Officer
8.	BITE	Block Institute of Teacher Education
9.	BRC	Block Resource Centre
10.	BSE	Board of Secondary Education
11.	CG	Curricular Goals
12.	CHSE	Council of Higher Secondary Education
13.	CF	Curriculum Framework
14.	CPD	Continuous Professional Development
15.	CRC	Cluster Resource Centre
16.	CRCC	Cluster Resource Centre Coordinators
17.	CSE	Centre for Science and Environment
18.	CSO	Civil Society Organization
19.	CTEs	College of Teacher Education
20.	CwSN	Child with Special Needs
21.	DAISY	Digitally Accessible Information System
22.	DEOs	District Education Officer
23.	DIET	District Institute of Education and Training
24.	DIKSHA	Digital Infrastructure for Knowledge Sharing
25.	DIY	Do It Yourself
26.	DSE	Department of School Education
27.	DTE	Directorate of Teacher Education
28.	ECCE	Early Childhood Care and Education
29.	EE	Environmental Education
30.	EL	Experiential Learning
31.	EVS	Environmental Studies
32.	FLN	Foundational Literacy and Numeracy

S. No.	Acronym	Full Form
33.	GCED	Global Citizenship Education
34.	GDP	Gross Domestic Product
35.	GEC	General Education Council
36.	GRE	Gross Enrolment Ratio
37.	GSP	Green Schools Programme
38.	HEIs	Higher Education Institutes
39.	HIIT	High Intensity Interval Training
40.	HPC	Holistic Progress Card
41.	IASEs	Institutes of Advanced studies in Education
42.	ICT	Information and Communication Technology
43.	ID	Intellectual Disability
44.	IDA	Interdisciplinary Areas
45.	IEP	Individualized Education Plan
46.	IKS	Indian Knowledge System
47.	ISL	Indian Sign Language
48.	IT	Information Technology
49.	ITEP	Integrated Teacher Education Programme
50.	KVS	Kendriya Vidyalaya Sangathan
51.	LiFE	Lifestyle for Environment
52.	LMS	Learning Management System
53.	LOs	Learning Outcomes
54.	LS	Learning Standards
55.	LTMs	Learning-teaching Materials
56.	MCQ	Multiple Choice Question
57.	MCMs	Monthly Cluster-Level Meetings
58.	MHRD	Ministry of Human Resource Development
59.	MIIT	Medium Intensity Interval Training
60.	ML	Machine Learning
61.	MoI	Medium of Instruction
62.	MWCD	Ministry of Women and Child Development
63.	NAAC	National Assessment and Accreditation Council
64.	NCERT	National Council of Educational Research and Training
65.	NCF	National Curriculum Framework
66.	NCF-TE	National Curriculum Framework for Teacher Education

S. No.	Acronym	Full Form
67.	NCF-FS	National Curriculum Framework for Foundational Stage
68.	NCF-SE	National Curriculum Framework for School Education
69.	NCTE	National Council for Teacher Education
70.	NDEAR	National Digital Education Architecture
71.	NEP	National Education Policy
72.	NETF	National Educational Technology Forum
73.	NGC	National Green Corps
74.	NGR	National Resource Group
75.	NIEPA	National Institute of Education Planning and Administration
76.	NIOS	National Institute of Open Schooling
77.	NISHTHA	National Initiative for School Heads' and Teachers' Holistic Advancement
78.	NPST	National Professional Standards for Teachers
79.	NROER	National Repository of Open Educational Resources
80.	NTA	National Testing Agency
81.	OCF-SE	Odisha Curriculum Framework for School Education, 2025
82.	OSCP	Offensive Security Certified Professional
83.	OSEPA	Odisha School Education Program Authority
84.	OVEP	Olympic Value Education Program
85.	PE	Physical Education
86.	PFMS	Public Financial Management System
87.	PhET	Originally Physics Education Technology, now a STEM-based free online simulation tool alternative for real-world experiments
88.	POA	Program of Action
89.	POCSO	Protection of Children from Sexual Offenses Act, 2012
90.	POSH	Prevention of Sexual Harassment Act, 2013
91.	PSSB	Professional Standard Setting Body
92.	OSPST	Odisha State Professional Standards for Teachers
93.	SPSSB	State Professional Standard Setting Body
94.	PTM	Parent-Teacher Meeting
95.	PTR	Pupil-Teacher Ratio
96.	RPWD Act	Rights of Persons with Disabilities Act, 2016
97.	SCDP	School Complex/Cluster Development Plans
98.	SCERT	State Council of Educational Research and Training
99.	SCF	State Curriculum Framework

S. No.	Acronym	Full Form
100.	SCPCR	State Commission for protection for Child Rights
101.	SDGs	Sustainable Developmental Goals
102.	SDP	School Development Plan
103.	SEDG	Socio-Economically Disadvantaged Group
104.	SMC	School Management Committee
105.	SQAAF	School Quality Assessment and Accreditation Framework
106.	SS	Social Science
107.	SSSA	State School Standards Authority
108.	STEM	Science, Technology, Engineering, Mathematics
109.	SWAYAM	Study Webs of Active-Learning for Young Aspiring Minds
110.	TBPM	Textbook Production and Marketing
111.	TEIs	Teacher Education Institutes
112.	TET	Teacher Eligibility Test
113.	TLM	Teaching-Learning Material
114.	TPD	Teacher Professional Development
115.	TWAU	The World Around Us
116.	UDL	Universal Design for Learning
117.	UGC	University Grant Commission
118.	UNESCO	United Nations Educational, Scientific and Cultural Organization
119.	UNICEF	United Nations Children's Fund
120.	VE	Vocational Education
121.	VI	Visual Impairment
122.	VR	Virtual Reality
123.	WCD	Women and Child Development
124.	YUVAi	Youth for Unnati & Vikas with AI

Content

Chapter 1

Introduction

The National Education Policy 2020 envisions a system of education rooted in Indian ethos, which will contribute to transforming India into an equitable and vibrant knowledge society through active economic participation of all. This chapter provides a broad framework for school education in Odisha, aligned with the vision of NEP 2020 and NCF-SE, 2023, thereby attaining the five broad aims of education, viz., Rational Thought and Independent Thinking/Autonomy, Health and Well-being, Democratic and Community Participation, Economic Participation and Cultural Participation.

The National Education Policy 2020 (NEP 2020) is the first education policy of the nation in the 21st century. This has been developed keeping in view the latest development in education in the educationally developed nations of the world. Many things have changed since India's first education policy was formulated in 1986. India has made significant progress in universalizing elementary education through decades of concerted efforts, and today it aspires to meet global standards in education and development centering on Indian philosophy and the country's rich heritage.

The NEP, 2020 calls for a complete transformation of India's schooling system to make it of the highest quality for all students equitably, and to serve the needs and aspirations of the country and its people, today and for the future. The purpose of the National Curriculum Framework for School Education (NCF-SE, 2023) and also of the National Curriculum Framework for Foundational Stage (NCF-FS, 2022) is to help in bringing about such changes by effecting corresponding positive transformations in India's school curricula.

The Odisha Curriculum Framework for School Education (OCF-SE, 2025) is designed in synchronization with the NCF-FS, 2022 and NCF-SE, 2023. An important aspect of OCF-SE, 2025 is about 'curriculum' which refers to the overall goals, plans, arrangements, and practices that shape the experiences of students in schools. 'Curriculum' does not just refer to the subject content of textbooks and other Teaching-Learning Materials (TLMs) and their pedagogy, but also includes aspects, such as, school environment and culture. It is indeed only through such holistic and integrated changes across all these key aspects of the curriculum that it will be possible to transform the overall learning experiences of our students.

This SCF recognizes the central role of the teacher as a facilitator of the desired changes in content and processes. Accordingly, the OCF centers on the perspective of a teacher's reality. It carries the detailed suggestions and illustrations which would enable the school authorities to bring in the desired changes at the school level. The detailed feedback about all enabling elements would also enable the teachers and their partners to transform the changes in totality.

Success of teachers depends on what sort of working environment they experience. Education leaders including head teacher, academic support from CRC, BRC, DIET, administrative support from the department at the district and state level including SCERT, Examination Boards, and many other research and resource agencies situated around the schools, need to work together to achieve success in the system. At the local level, partners including parents, community members, and of course, the students, have a great role in enriching the physical and learning environment in each school.

This OCF recognizes the critical role of each enabling school partner and outlines their roles and functions in a coherent manner so that they all join hands for the desired transformation at the school level across the state.

1.1 Vision of the Curriculum Framework

Matching the rhythm of the overall developmental journey of India in the global context, the NEP 2020 calls for a new National Curriculum Framework (NCF) and new State Curriculum Frameworks (SCFs) as the bases for transforming school education in the nation. This is in consonance with the empowerment of states in our federal structure with education as a concurrent subject. Bringing in consonance and harmony across the curricula in the country is one of the major goals of NCF.

The new policy aspires to develop an educationally robust and aspirational education system for all our children, which will enable all students irrespective of their circumstances or background, and they will get the best possible education, with complete support from a learning-friendly system.

The new curricula would strive in a coherent way to foster a school education system that builds character of each individual learner and enables all to be humane, healthy, ethical, creative, rational, compassionate, competent and caring individuals, who would acquire the desired knowledge, skills, values and dispositions through high quality education. It would aim for all students not just to learn, but more importantly, for learning how to learn, so that they may become lifelong learners and also have the ability to constantly adapt to changing times. The new curriculum stands bold to enable and inspire students to actively participate in and contribute to their society culturally, economically and democratically.

Using education as a key tool for holistic social transformations, the new curriculum aims to transform our society into one that is more just, equitable, humane, prosperous, sustainable, and rooted in Indian ethos and culture. It would enable India's continued ascent and leadership on the global stage in terms of economic growth, social justice and equality, research and knowledge creation, scientific and technological advancement, environmental sustainability, and cultural preservation and vibrancy. The education system would serve as a platform for

preparing students in sync to ensure that the actual practice of the curricula, including content, pedagogy, environment, and culture in schools, clearly promote these individual and societal goals.

1.2 Curriculum Content

With rapid changes in perspective and approaches of science and technology the world is changing rapidly in the domains of knowledge and its application. There is dramatic change in collection and use of detailed data in all sectors of development, machine learning, and artificial intelligence. From a job-oriented mindset people are aspiring to go for entrepreneurships and new start-ups designing new ideas, dreams and creative ventures in new domains in a dynamic manner. They are demonstrating abilities to integrate multidisciplinary capacities across different subject areas along with empathy, care, communication, and ethical reasoning. This calls for appropriate changes in the content and processes in the education system to enable each of the students acquire desired subject-specific skills along with soft skills for application of their knowledge to solve emerging problems and issues and actualize the dream change they aspire for in life and society.

Odisha, a land of creativity with locally available materials nurtures rich learning environment through the stories of its rich past in the form of great courage on land, agricultural land and sea, unparallelled creativity, deep spiritual consciousness, unique literature and celebrations in the form of a variety of year-wide festivals. Childhood in the state enjoys all these educational elements from generation to generation and develops leaders of passion, courage, resilience and creativity. Odias display these unique leadership skills wherever they work in the world.

The SCF aims to stand on the state's rich legacy and heritage and enrich these social outcomes reflected in the abilities and skills of childhood through schools and colleges. Odisha also experiences natural calamities on a regular basis in the form of drought, floods, cyclones, etc. which challenge its development processes at regular intervals. With climate change, environmental degradation, and depleting natural resources, there is an increasing demand for capacities for environmental sustainability. It calls for environmental restoration and regeneration, which will be required to save our societies and planet.

There are large scale moves in today's world to achieve the 17 complementary and inclusive Sustainable Development Goals (SDGs). They strive to mitigate hunger, poverty, illiteracy, from the world by taking care of nature and all its treasures and by extending quality education, health services, and sustainable development models in all parts of the globe. However, the development processes are challenging these aspirational goals by consuming the planet's resources at a much faster rate than expected.

In this context, the Indian worldview and traditional knowledge system of '*Vasudhaiva Kutumbakam'* (The World is One Family) provides hope at a time when the future is at stake for all lives on the living blue planet. Based on the ancient educational philosophy, the NEP 2020 and resulting NCF and SCFs aim to design new strategies in education which prepare childhood and youth as compassionate and creative leaders who have knowledge and respect for their environment and treasures. The content and pedagogical processes in school

education would consciously focus on these aspects at all stages in an integrated manner. To actualize this, the health and well-being of individuals remains a key aspect for success in all other aspects of life. Education across all subject areas, as well as in physical education, health, and well-being, is also critical for the holistic development of the individual. Students would acquire a multidisciplinary education that includes art and craft, physical education and well-being practices, vocational education, languages and literature, as well as mathematics, science, and social science. This will help to ensure the development of all aspects and capabilities of learners, and help to make education more well-rounded, useful, engaging, and fulfilling to the learner.

As a part of the 21st century learning, certain key capacities, values, and dispositions, would be acquired by all students across subject areas to become good, fulfilled, and productive human beings in today's rapidly changing world. These capacities, values, and dispositions include: scientific temper and evidence-based and critical thinking; creativity and innovativeness; sense of aesthetics and art; oral and written communication; multilingualism; health and nutrition; mental and physical fitness and well-being; collaboration and teamwork; problem solving and logical reasoning; ethical and moral reasoning; digital literacy, coding, and computational thinking; knowledge and practice of human and constitutional values; empathy, inclusion, and pluralism; fundamental duties; citizenship skills and values; environmental awareness and sensitivity; cleanliness, sanitation and hygiene; cultural literacy and identity; rootedness and pride in India; and knowledge of current affairs and critical issues facing local communities, states, the country, and the world.

The Odisha Curriculum Framework for School Education (OCF-SE, 2025), in sync with the NCF-SE, 2023, aims to promote Competency-based Learning enriching Knowledge, Capacities, Values and Dispositions of all learners. For this, the OCF would suggest to reduce the content load in each subject to the core essentials in order to make time and space for more effective pedagogy, including more multi- and inter-disciplinary, experiential, discussion-based, and activity-based learning. All of these would result in a deeper disciplinary understanding of the subjects and develop relevant capacities, values, and dispositions.

1.3 School Environment, Practices and Culture

The school environment, practices and culture have a great role in the nature and quality of learning of the students. The physical and learning environments in a school improve based on the beliefs, assumptions about how children learn and their practices related to these. The culture of schools will be transformed to maximize the ability of teachers to perform their roles effectively, and to ensure that all members of the school are part of the vibrant, caring, and inclusive communities. All teachers, students, parents, principals, and other support staff need to ensure that our students feel safe and comfortable, are cognitively, emotionally and physically healthy, and are enjoying the learning process.

Over the years, physical environment in the schools, on average, has improved with availability of basic infrastructural facilities. This OCF aims to use the infrastructure effectively and promote inclusive learning environment for students. A nurturing school environment and culture of this type can be developed through the leadership of teachers, principals, and other school functionaries who can act as role models to students. Inclusive, caring, and nurturing

practices at the school by teachers and other staff can help develop desirable values and dispositions in students, e.g., not publicly sharing or displaying student information about their socio-economic backgrounds; not treating students differently regardless of caste, gender, religion, disability, etc.; fostering a sense of community; respecting students' home languages in cases where they are different from the school languages; nurturing and valuing the natural environment; keeping the school building and surrounding areas clean and tidy, etc. This will help develop corresponding desirable values and dispositions in students that may not be developed effectively through 'curriculum content' alone.

In order to enable these transformations of the curriculum in practice, this OCF aims to account for the reality of the average teacher and school, such as the widespread existence of multigrade and multilevel teaching, and provide a realistic pathway taking into account the resources available to the teacher, the capacities of the teacher and the surrounding system, and the environment that the teacher has to operate in, e.g., school and class size, the community and socio-economic backgrounds of students.

1.4 Learning Standards

The term 'Learning Standards' refers to the objectives of education or educational achievements that must be derived from the aims of education. Learning Standards are intended to provide clarity to all stakeholders, including teachers, students, educational functionaries, parents, and society on the objectives/competencies students are expected to achieve in schools. Clarity of objectives is critical to success of the education system. To bring clarity, objectives must be derived from the aims of education, clear, consistent, achievable by the learners, and understandable to the teachers and parents.

Learning Standards state the 'flow-down' and interconnectedness of Aims of education, Curricular Goals, Competencies, and Learning Outcomes. Each set must be derived from the immediate level above. This flow-down from Aims to Learning Outcomes helps in aligning syllabus, content, pedagogical practices, institutional culture, and, above all, in achieving the desired objectives of education. But it is seen that teachers put their efforts towards achieving specific learning objectives/ learning outcomes, without having clarity on the aims from which objectives have been derived. The State, while developing curriculum and textbooks, needs to conduct exercise for such a flow-down to arriving at Learning Standards.

This SCF has drawn the aims of school education from the vision and purpose of education stated in NEP 2020, which reflect the knowledge, capacities, values, and dispositions that need to be developed in students; the curricular goals are derived from the aims of education; the competencies are drawn from these curricular goals; and the learning outcomes from those competencies.

The state curriculum and textbook developers would consider the curricular goals stated in Part C of NCF-SE, 2025 as such, and can make certain changes in the competencies, if required, based on the state's context; and develop learning outcomes for each competency considering the Nation and State contexts. It must be remembered that fewer changes in the competencies articulated in the NCF-SE should be made by the State curriculum developers.

1.4.1 Aims of School Education

The aims of education, for our country, are derived from the vision and purpose of education described NEP 2020, and have been organized into five key aims such as: (i) rational thought and independent thinking/autonomy; (ii) health and well-being; (iii) democratic and community participation; (iv) economic participation; and (v) cultural participation. These aims are an important source for curricular goals and give direction to the educational achievements through the aims for each subject.

This National Education Policy envisions an education system rooted in Indian ethos that contribute directly to transforming India, that is Bharat, sustainably into an equitable and vibrant knowledge society, by providing high-quality education to all, and thereby making India a global knowledge superpower. [NEP 2020, The Vision of this Policy]

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 moorings and values. It aims at producing engaged, productive, and contributing citizens for building an equitable, inclusive, and plural society as envisaged by our Constitution. [NEP 2020, Principles of this Policy]

The aim of education will not only be cognitive development, but also building character and creating holistic and well-rounded individuals equipped with the key 21st century skills. [NEP 2020, 4.4]

1.4.2 Curricular Goals

The aims of school education flow-down into the curricular goals, which are stage-specific. The curricular goals for the foundational stage are defined for the five domains of development, viz. (i) Physical Development, (ii) Socio-Emotional and Ethical Development, (iii) Cognitive Development, (iv) Language and Literacy Development, and (v) Aesthetic and Cultural Development. But, the curricular goals for the other stages are defined for specific curricular areas and are presented in Part C of the NCF-SE.

1.4.3 Competencies

The choices of competencies within each curricular goal are influenced by the factors such as curricular goals, which flow-down into competencies; outcomes of research relevant to the

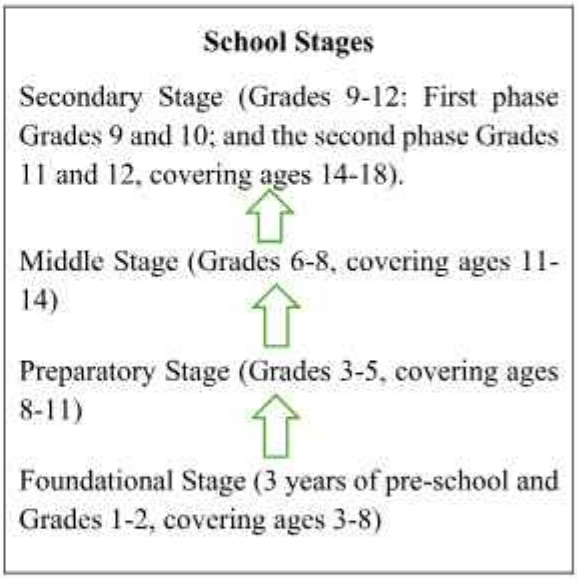
curricular area; experience of various educational initiatives; and our context. All stakeholders in school education should have clarity on the competencies that are expected to be achieved; and school systems should ensure that all students receive appropriate learning opportunities towards attaining the competencies. Attainment of competencies indicates that children receive appropriate learning opportunities.

1.4.4 Learning Outcomes

Learning outcomes are interim markers towards the attainment of competencies. The choices of learning outcomes within each competency are influenced by the factors such as socio-cultural contexts, the materials and resources available, capacity of teachers, and the contingencies of classrooms. Learning outcomes are more contextual. The state's curriculum and textbook developers should have the autonomy to define them based on the Local, National and Global contexts.

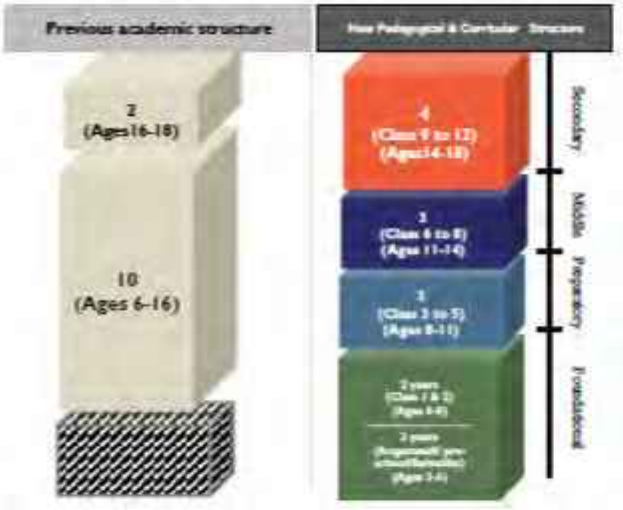
1.5 School Stages: 5+3+3+4 Structure

The NEP 2020 has restructured the curricular and pedagogical structure of school education to make it responsive and relevant to the developmental needs and interests of learners by dividing Schooling into four stages such as Foundational Stage for ages 3-8, Preparatory Stage for ages 8-11, Middle Stage for ages 11-14, and Secondary Stage for ages 14-18. The curricular and pedagogical structure and the curricular framework for school education will therefore be guided by a 5+3+3+4 stage 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 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). Since, the government of Odisha is committed to implement the Policy in toto, the state should adopt this 5+3+3+4 stage design.



The Foundational Stage will consist of five years of flexible, multilevel, play/activity-based learning and the curriculum and pedagogy of ECCE. 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. 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 in

sciences, mathematics, arts, social sciences, and humanities. Experiential learning within each subject will be encouraged and emphasized. 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, and greater flexibility and student choice of subjects. In particular, students would continue to have the option of exiting after Grade 10.



(NEP, 2020; pp 6)

1.6 Pedagogy and Assessment

1.6.1 Pedagogy

Broadly, the term 'Pedagogy' refers to the philosophical framework for our teaching: The art and science of teaching for learning; the lens in which we plan, carry out and reflect on our teaching; and a deliberate attempt at improving learning process by considering the nature of the learners, contents, methods, media, and other aspects of the environment. It is created from theories of learning. The effective pedagogy is based on a good understanding of how children grow and learn, and a clear focus on Curricular Goals, Competencies, and Learning Outcomes to be achieved for students. NEP 2020 provides a very comprehensive explanation of effective pedagogy for educational institutions.

> *A good educational institution is one in which every student feels welcomed and cared for, where a safe and stimulating learning environment exists, where a wide range of learning experiences are offered, and where good physical infrastructure and appropriate resources conducive to learning are available to all students.*
>
> *[NEP 2020, Principles]*

Research conducted across the world on how children learn reveals that the aspects such as brain, emotions, learning environment, and socio-cultural environment, have practical implications for teaching and learning. Moreover, ancient Indian scriptures as well as current cognitive science research indicate that memory (smriti), including both working memory and long-term memory, practice, and questioning plays an important role in cognition and comprehension and thereby in the achievement of valuable knowledge, capacities, values, and dispositions by students. The key elements of effective pedagogy in the classroom are as follows:

i. Ensuring respect and care for children.
ii. Building positive teacher-student relationships through different means.
iii. Providing systematic support to students by experienced students or adults.
iv. Using differentiated instruction to address the needs of students with varying interests and capabilities for better learning.
v. Providing opportunities for independent and collaborative work.
vi. Using varied resources such as textbooks and other resources and materials beyond the textbook.
vii. Helping students develop appropriate work habits and responsibility.
viii. Giving meaningful and immediate feedback to students.

1.6.2 Instructional Planning

Teaching is a deliberate act carried out with the intention of bringing about learning in students. Therefore, planning is central to good teaching. It, *inter alia*, includes construction and organisation of classroom tasks as per Competencies and Learning Outcomes, pedagogy, resources to be used, assessment mechanism, support activities for students, and home assignments. Good planning requires understanding of Aims of Education, Curricular Goals, Competencies, and Learning Outcomes, along with previous learning of the students and available TLMs and content to be used, outcomes to be achieved, pedagogy to be followed, resources to be used, and assessment to be carried out. Planning also includes support activities for students, home assignments, and displays in the class relevant to what is being taught.

Teaching needs to be well planned and a deliberate act to bring about learning in students. The core principles of teacher's pedagogy, *inter alia,* include: commitment to students and learning, knowledge base on subject, knowledge of how to teach those subjects, knowledge of ICTs and their usage, managing and monitoring student learning, thinking systematically about his practices, learning from experiences, and becoming member of learning communities.

Pedagogy is the method and practice of teaching used in classrooms by the Teacher to help students learn. Effective pedagogy is based on a good understanding of how children grow and learn, and a clear focus on the Curricular Goals, Competencies, and Learning Outcomes to be achieved for students.

Components of an Instructional plan

- Competencies, Learning Outcomes, and Lesson Objectives
- Activities to be performed by students and teachers
- Prior understanding of the student
- Content and material to be used
- Duration and sequence of activities
- Classroom arrangements
- Specific strategies for CwSN
- Methods of assessment

The NEP 2020 emphasizes the holistic development of the learners, which requires using innovative pedagogical approaches such as experiential learning, cutting edge pedagogy, art integrated learning, flipped classroom etc. Pedagogical practices determine the learning experiences arranged for the learners, thus directly influencing their learning

outcomes. Therefore, the use of relevant pedagogy is necessary to achieve the objectives of the curricula successfully.

Panchapadi: Five-Step Learning Process

The five-step learning process: *Panchapadi*, that contains all the components of a lesson plan, is a good guide for a teacher to adopt in planning for instruction:

Adhiti (Introduction): In this step, the teacher introduces a new concept/topic based on the child's prior knowledge. Children gather relevant information regarding the new topic by asking questions, exploring, and experimenting with ideas and material.

Bodh (Conceptual Understanding): Children try to understand core concepts through play, inquiry, experiment, discussion, or reading. The Teacher observes the process and guides the children.

Abhyas (Practice): This step is about practice to strengthen understanding and skills through different activities like group work or projects for the attainment of Competencies.

Prayog (Application): This step involves applying the understanding in the child's everyday life through various activities and projects.

Prasar (Expansion): This step envisages spreading the acquired understanding (*pravachan*) and to learn further (*swadhyay*). Sharing and enhancing knowledge strengthens our learning. Learning is incomplete if we do not teach what we have learnt. Teaching makes learning clear and long-lasting.

1.6.3 Overall Principles of Effective Pedagogy

Effective pedagogy encourages conceptual understanding, active discovery, questioning and debating, and independent learning. It gives serious consideration to student experiences and student voices, acknowledges and accommodates student diversity, builds on students' previous knowledge, uses a range of teaching-learning techniques, and gives timely feedback on work done. Therefore, educators need to keep in mind a set of principles of pedagogy, and strictly adhere to a set of non-negotiable aspect in classroom planning and instruction across all Stages.

<u>Principles of Pedagogy</u>

- Learning is an active process.
- Children learn best when they are respected, valued, and involved in the learning process.
- Children learn in a variety of ways.
- Learning happens best when classroom processes is connected with the life of students.
- Practice is critical and integral to learning process.

<u>Non-negotiable Aspects</u>

- Punishment and fear

- Inequity in the classroom
- Memorization as the primary form of assessment
- Students as passive receivers of information

1.6.4 Assessment

The major objective of the assessment is to make out the learning needs of children to allow them to build on their strengths and support them to overcome the gaps in learning. It is not just to measure what children can recall, what was taught, but it is also to see, whether it is translated into holistic learning and development of learners. Taking cognizance of this objective, the Program of Action (POA), 1992, and all the National Curriculum Frameworks (NCFs), developed subsequently, recommended an evaluation system integral to the teaching-learning process to avoid anxiety, harassment, and humiliation to children. In order to be holistic, assessment needs to be multiple-evidence based and requires collecting information from various sources on different aspects of learning, i.e., knowledge, performance, skills, interests, attitude and motivation. This helps teachers to understand the learning needs of each child, thereby to modify their teaching-learning activities and process. It involves students as partners in planning, transaction, and assessment of the teaching-learning process. Thus, assessment enhances a child's confidence and helps in developing her/his abilities for lifelong learning. Moreover, it provides comprehensive information regarding the extent of student learning on all aspects of the curriculum, including performance in different subject areas, skills, interests, attitudes, and motivation in a holistic manner without segregating into compartments of curricular and extra-curricular areas.

The National Education Policy (NEP)-2020 considered assessment as an integral part of the teaching-learning process and recommended that the aim of assessment in the culture of our schooling system will shift from summative to one that is more regular and formative, more competency-based, promotes learning and development of students, and tests higher-order skills. It envisaged that the primary purpose of the assessment will be for learning; it will help the teacher and student, and the schooling system, revise teaching-learning processes so as to optimize learning and development for all students at all levels of education (NEP 2020, para 4.34, pp. 17). The policy further states that the progress card of all students for school-based assessment will be completely redesigned by the respective States/UTs under guidance from the proposed

Assessment of learning, for learning, and as learning

Assessment of learning refers to criteria-based comprehensive assessment that provides information regarding the student learning against curricular objectives. It is used to benchmark students' learning against criteria (e.g., Skills, Learning Indicators, Learning Outcomes), and to share learning progress with the stakeholders.

Assessment for learning refers to evidence of student learning gathered by the teacher that provides inputs to guide teaching-learning processes. It is integral to teaching learning and occurs continuously during teaching learning process. It is school-based and relies on data collected from the activities of the child both inside and outside the classroom.

Assessment as learning refers to a process in which learners can play an active role in taking charge of their own learning and also are encouraged to reflect on peer and group work. It places the onus of learning on different stakeholders, e.g., parents, children, teachers, principal.

National Assessment Centre,

The NCERT, and SCERTs will develop a format for the progress card, which will be a holistic, 360-degree, multidimensional report that reflects in great detail the progress as well as the uniqueness of each learner in the cognitive, affective, and psychomotor domains. It will include self-assessment and peer assessment, the progress of the child in project-based and inquiry-based learning, quizzes, role plays, group work, portfolios, etc., along with teacher assessment (NEP 2020, para 4.35, 17-18).

1.7 Scenario of School Education in Odisha

School education in Odisha is one of the largest systems in the country with 61,693 schools including 49,478 elementary schools, 9,416 secondary schools, and 2,799 higher secondary schools; 3,34,459 teachers; and 75,86,079 children. Of all the children, 19% constitute SC students, 27% constitute ST students and 49% constitute girl students. Government schools of the State include the schools of the Department of Education, Department of Tribal Welfare and Eklavya Model Residential Schools, other State Government managed Schools, Government Aided Schools, and partially Aided Schools. Other than these, there are also schools that are Central Govt. Managed, Private Unaided (Recognised), Private Unrecognised and also Kendriya Vidyalayas (KV) and Jawahar Navoday Vidyalayas (JNV).

Management of School Education: The Department of School & Mass Education, Government of Odisha consists of four major Directorates, viz., Directorate of Elementary Education, Directorate of Secondary Education, Directorate of Higher Secondary Education, and Directorate of Teacher Education and SCERT. The Directorate of Elementary Education is linked to the Odisha School Education Program Authority (OSEPA) and State Institute of Open Schooling (SIOS); the Directorate of Secondary Education is linked to Odisha Adarsha Vidyalay Sangathan (OAVS), State Institute of Educational Management and Training (SIEMAT), Textbook Promotion and Marketing (TBP&M) and Board of Secondary Education (BSE); The Directorate of Higher Secondary Education is linked to the English Language Training Institute (ELTI) and Council of Higher Secondary Education (CHSE); and The Directorate of TE & SCERT is linked to *Panchasakha Sikhya Setu* (formerly known as Mo School Abhiyan Sangathan).

Key Quality Education Initiatives: To improve quality of education at different stages of school education, the government of Odisha has taken several initiatives from time to time, e.g., the Foundational Literacy Numeracy (FLN) programme is being implemented in all the Govt. Schools having primary section; Vidya Pravesh module is introduced in 44,937 schools for 4,76,082 students of Grade 1 of all Govt. schools; all the Govt. and Govt. Aided secondary schools are provided with Computer Lab to promote ICT enabled education; Smart Class devices have been provided to schools for grades 6 to 10; Atal Tinkering Laboratories (ATL) are operationalized in 363 secondary schools; 7,094 Govt. Upper Primary schools are equipped with Smart Class devices; 96,718 primary teachers use tablet computers to provide digital learning to primary students.

Vocational Education: Vocational Education has been introduced in 1,061 schools

(including 60 Higher Secondary Schools) in 12 Sectors with 26 NSQF aligned Job Roles across 30 districts of Odisha. During 2024-25, 1,28,518 students (55,405 girls and 73,113 boys) have been enrolled for vocational education. Currently, vocational education subjects are being offered as third language subjects in secondary school and as fourth optional in higher secondary schools.

Infrastructure Facilities: UDISE+2023-24 data shows the existence of huge digital divide in terms of availability of functional computer facilities (only available at 59.4% schools), functional smart classrooms (only available at 27.6% schools), art/craft rooms (only available at 19.5% schools), functional desktops/PCs (only available at 24.9% schools), etc. In all these indicators, government schools fall behind other types of schools.

Performance Based on NAS 2021: National Achievement Survey, 2021 provides information about the performance of students in terms of attainment of learning outcomes in different subjects based on competency-based questions. The performance of students in different subjects at grade 8 and grade 10 reveals that it is almost equal to the national average for grade 8, whereas it is less than the national average for grade 10 in most of the subjects.

Education of Children with Special Needs (CwSN): The State has around one lakh Children with Special Needs (CwSN), including impairment in 21 domains (e.g., Blindness, Low-Vision, Hearing Impairment, Speech and Language, Locomotor Disability, Mental Illness, Specific Learning Disabilities, Cerebral Palsy, Autism Spectrum Disorder). These children are enrolled in 82,671 schools including 65,493 elementary schools and 17,178 secondary Govt. & Govt. aided schools. Each block has two Resource Persons (CwSN) who are trained in Special Education. For this, Braille book for blind students, large print books for low vision students; and aids and appliances, TLM kit, ICT and low vision devices, stipend for girls, escort allowance, transport allowance are provided to students.

Mother-Tongue based Multilingual Education (MTB-MLE): To enrich equity in the system, Mother-Tongue Based Multilingual Education (MTB-MLE) program is implemented in 21 tribal languages in 1,483 schools of 17 districts covering 97,486 ST students. To facilitate MTB-MLE education, 3, 200 MLE *Shiksha Sahayaks* and 213 Education Volunteers (EVs) have been engaged from the respective tribal communities. Textbooks and supplementary reading materials in 21 tribal languages have been developed for primary grades integrating tribal culture and tradition.

Community Awareness: To enhance community participation, the state runs *'Sachetanata Rath'* (Back to School campaign) to create awareness among the parents and community members to send their wards to schools. Parent Teacher Meetings (PTM) are organized in all districts at the school level. To ensure universal enrolment and attendance, *'Pravesh Utsav'* and *'Purna Upasthan Divas'* is conducted in all schools. These activities contribute to awareness building among the parents, teachers, students, and community members to identify the out-of-school children, mobilize their parents for their enrolment in age-appropriate classes, and to send their children to schools regularly.

Dropout Rate: The dropout rate at the secondary level (12%) remains a concern for the

state. The available data reveals that only 42% of students' progress to Class 12 from the entry level. This indicates that students who enroll in Class I face challenges in completing their primary, secondary, and higher secondary education for various reasons.

Teachers Education: Odisha offers teacher education primarily through government institutions. Integrated Teacher Education Program (ITEP), aligned with the mandate of NEP 2020, has been launched by IIT Bhubaneswar and MPC Autonomous College, Baripada. The 4-year Integrated BA/B.Sc B.Ed. programs are run in Universities and Higher Education Institutions (HEIs) and Universities of the state, e.g., Ravenshaw University, Cuttack, GM University, Sambalpur, FM Autonomous College, Baleswar, and SCS Autonomous College, Puri, and Regional Institute of Education (RIE) Bhubaneswar.

1.8 The Process of Development of OCF-SE 2025

The process of school curriculum development in India is a structured and collaborative effort led by the National Council of Educational Research and Training under the Ministry of Education. The development of Odisha Curriculum Framework for School Education (OCF-SE, 2025) is the continuation of National initiatives such as Development of NEP, 2020, Formulation of NCF-FS 2022 and NCF-SE 2023. Prior to the development of OCF-SE, the State of Odisha developed 25 position papers in key areas of school education with a view to contextualize the NCF-FS 2022 and NCF-SE 2023 developed by the NCERT. However, both the National Curriculum Frameworks (NCF-FS 2022 and NSF-SE 2023) and 25 Position papers are the guiding documents in the development of OCF-SE, 2025.

Development of SCF Odisha: Chronology of Events

Formulation of NEP 2020

⇩

Formulation of NCF-FS 2022 and NCF-SE 2023 led by the NCERT and consultation with stakeholders

⇩

Preparation of 25 Position Papers led by the TE & SCERT, Odisha

⇩

Organization of National Workshop in Odisha

⇩

Formation of a Steering Committee for the development of SCF

⇩

Submission of draft OCF-SE to NCERT for vetting

⇩

Submission of vetted OCF-SE to Govt. of Odisha

The actual process of development of SCF, Odisha began with the organization of a two-day National workshop on preparation of a roadmap for implementation of the National Education Policy 2020 in Odisha followed by formation of a 19-member Steering Committee dedicated to the development of State Curriculum Framework for School Education. The committee was supported by 10 groups of subject experts constituted by the Directorate of Teacher Education and SCERT, Odisha for writing contents related to school subjects. The committee held a series of workshops for preparing the draft OCF, which was submitted to the NCERT, New Delhi for vetting. The vetted OCF was submitted to the Government of Odisha in the Department of School and Mass Education for approval.

1.9 Major Shifts

As per the vision of the NEP 2020, there is a major shift in learning, pedagogical approaches, language policy, curriculum development, integration of curricular subjects, literacy, numeracy and skill development. This section provides brief outlines of these shifts:

1.9.1 Towards Competency-Based Learning

The NEP 2020 says, *"To close the gap in achievement of learning outcomes, classroom transactions will shift, towards competency-based learning and education"* (p.12). A significant proportion of children in India who complete preschool education, public or private, do not have the needed school readiness competencies when they join schools. The learning and assessment must shift its focus from rote memorization, testing facts and summative assessment to formative and adaptive assessment, which will be more competency-based. This will promote learning and development of students, and test core capacities and higher-order skills, such as analysis, critical thinking, and conceptual clarity. Competencies are specific learning achievements that are observable and can be assessed systematically. In this SCF, Curricular Goals and corresponding Competencies, derived from NCF-SE 2023 (see Annexure), are expected to be attained by the end of a specific stage. Summative assessments at the end of each stage of schooling should be based on these competencies. The following are examples of some of the Competencies:

i) Students argue with proper rationale by carefully evaluating premises.

ii) Students converse fluently and can hold a meaningful conversation.

iii) Students understand oral instructions for a complex task and give clear oral instructions for the same to others.

1.9.2 Integration of Indian Knowledge System

The rich heritage of ancient and eternal Indian knowledge and thoughts, which are more multidisciplinary and holistic, has been a guiding light of the NEP 2020. According to NCF-SE, 2023, *Indian Knowledge Systems refer to all the systematized disciplines of knowledge that were developed to a high degree of sophistication in India, and also all of the traditions and practices, which various communities of India, including tribal communities have evolved, refined, and preserved over generations*. The aim of education in ancient India was not just the acquisition of knowledge as preparation for life in this world, or life beyond schooling, but for the complete realization and liberation of the self. The rich legacies to world heritage must not only be nurtured and preserved for posterity but also researched, enhanced, and put to new uses through our education system. The "Knowledge of India" including richness of tribal knowledge and indigenous and traditional ways of learning will be incorporated in an accurate and scientific manner throughout the school curriculum in Odisha wherever relevant.

1.9.3 Experiential Learning and Innovative Pedagogy

NEP 2020 says, *Pedagogy must evolve to make education more experiential, holistic, integrated, inquiry-driven, discovery-oriented, learner-centred, discussion-based, flexible, and, of course, enjoyable.* Experiential learning is an approach where learners actively acquire

knowledge, skills and attitudes through direct experience, reflection and application rather than being passive recipients of information. It emphasizes hands-on activities, problem solving, critical thinking and real-world application, often involving projects, internships, field trips, or simulations. 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.

In all stages, experiential learning will be adopted, including hands-on learning, arts-integrated and sports-integrated education, story-telling-based pedagogy, ICT pedagogy within each subject, and with explorations of relations among different subjects. Arts-integrated approach will strengthen the linkages between education and culture. Sports-integrated learning will foster holistic development by promoting physical and psychological well-being while also enhancing cognitive abilities. Story-telling-based pedagogy will engage learners by connecting their emotions and imaginations in real-life contexts within academic content.

Odisha has a rich heritage of art, history, culture, literature. etc., which are depicted in its temples, artefacts, museums, festivals, agricultural practices, etc. Schools in the state can give exposure to children by conducting visits to museums, zoo, institutes of sciences and technology, temples, historical sites, tourist destinations, etc. relevant to subjects, age and context, and allow them to reflect on their experiences. This will provide rich experiential learning to children and teachers as they can link their experiences to textbook content.

1.9.4 Mother-Tongue-based Multilingual Education

Odisha is the leading state in India adopting Mother Tongue Based Multilingual Education (MTB-MLE) in 21 tribal languages in 1584 primary schools since 2006. It provides a culturally responsive curriculum and textbooks from class I to class V, adopting language as a subject and language as a medium for tribal children. One of the fundamental principles of NEP 2020 that will guide both the education system at large, as well as the individual institutions within it is "promoting multilingualism and the power of language in teaching and learning;"

Young children learn and grasp nontrivial concepts more quickly in their home language/mother tongue. Hence, *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/ regional language.* This will be followed by both public and private schools in Odisha. High-quality textbooks, including in science, will be made available in home languages/mother tongue. All efforts will be made to ensure that any gaps that exist between the language spoken by the child and the medium of teaching are bridged. Teachers will be encouraged to use a bilingual approach, including bilingual teaching-learning materials, with those students whose home language is different from the medium of instruction.

1.9.5 Multi-Disciplinary Approach to Curriculum

One of the fundamental principles of NEP 2020 is "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." The seven curricular areas of Languages, Mathematics, Science, Social Sciences, Art Education, Physical Education and Well-being, and Vocational Education, along with interdisciplinary areas, will be designed to

develop multidisciplinary and interdisciplinary knowledge in students, allowing them to develop a well-grounded understanding of the world.

Necessary knowledge and skills that must be learned by all students include scientific temper, aesthetics and art, oral and written communication, ethical reasoning, sustainable living, Indian knowledge systems, digital literacy and computational thinking, knowledge of the country and Odisha, current affairs, and critical issues the world is facing. This will help to ensure the development of all aspects and capabilities of learners, and help to make education more well-rounded, useful, engaging, and fulfilling to the learner. The World Around Us (TWAU) will be given adequate time at the Preparatory Stage, which is a developmentally critical time to learn essential multidisciplinary skills of inquiring about and learning from the world around the students. Four-year secondary education will focus on multidisciplinary study with subject depth, analytical thinking, attention to life aspirations, allowing flexibility and choice of subjects for students. There should be no hard separation between `arts' and `science' streams, or between `academic' and `vocational' streams, or between `curricular' or `extracurricular' activities.

1.9.6 Vocational Education and Skill Development

One of the fundamental principles of NEP 2020 is no hard separations between vocational and academic streams in order to eliminate harmful hierarchies among, and silos between these two areas of learning. Hence, a concerted effort will be made in the state to ensure universal access and affordable opportunity to all children, including children with disability in any form, of the state to obtain quality vocational education from Grades 6 to12. In secondary schools, students will have increased flexibility and choice of subjects in vocational skills.

Vocational skill-based subjects will be incorporated throughout the school curriculum, with a consideration for what is interesting and safe at each age. Every student during Grades 6-8, will take a fun course, that gives hands-on experience of local vocational crafts, such as carpentry, electric work, metal work, gardening, pottery making, leaf plate making, coconut coir work, etc. suitable to Odisha context. All students will participate in a 10-day bagless period sometime during Grades 6-8 where they intern with local vocational experts such as carpenters, gardeners, potters, artists, etc. Similar internship opportunities to learn vocational subjects may be made available to students throughout Grades 6-12, including holiday periods.

The development of vocational capacities will go hand-in-hand with the development of 'academic' or other capacities. Skill labs will be set up in the school complex, which will allow other schools to use the facility. 'Lok Vidya', i.e., important vocational knowledge developed in India and the state, will be made accessible to students through integration into vocational education courses.

1.9.7 Strengthening Foundational Literacy and Numeracy (FLN)

Currently, a large proportion of students in the early grades are not achieving Foundational Literacy and Numeracy (FLN) i.e., the ability to read and comprehend basic text and the ability to carry out basic addition and subtraction with Indian numerals. This makes it difficult for students to achieve any further higher learning in Mathematics and excludes them from effective economic and democratic participation in later years. Attaining FLN for all students

must therefore become an immediate national mission and a central goal of the Foundational Stage curriculum. Realizing this, NEP 2020 focuses on FLN,particularly on reading, writing, speaking, counting, arithmetic, and mathematical thinking, with a robust system of continuous formative/adaptive assessment of learning outcomes and competency-based learning. 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. All viable methods such as experiential learning, arts-integrated, sports-integrated, and storytelling-based approaches, etc. will be explored to support teachers in attaining universal FLN. Peer tutoring and volunteer activities can be taken up as a voluntary and joyful activity for students under the supervision of trained teachers. The Grade 3 examination, in particular, would test basic literacy, numeracy, and other foundational skills.

1.9.8 Introduction of New Subjects

While students must have a large amount of flexibility in choosing their individual curricula, certain subjects, skills, and capacities should be learned by all students to become good, successful, innovative, adaptable, and productive human beings in today's rapidly changing world. Vocational education and skill development will be included from Grades 6 to 12. Art education and Physical Education and Well-being will be introduced from preparatory stage as separate subjects. Contemporary subjects such as Artificial Intelligence, Design Thinking, Holistic Health, Organic Living, Environmental Education, Global Citizenship Education (GCED), etc. will be introduced at relevant stages to develop important skills in students. The "Knowledge of India" including tribal knowledge and indigenous and traditional ways of learning will be incorporated in an accurate and scientific manner throughout the school curriculum wherever relevant.

Development of skills and values like, scientific temper and evidence-based thinking; creativity and innovativeness; collaboration and teamwork; problem solving and logical reasoning; ethical and moral reasoning; knowledge and practice of human and Constitutional values; gender sensitivity; Fundamental Duties; citizenship skills and values; environmental awareness and knowledge of critical issues facing local communities, States, the country, and the world will be given adequate focus across the subjects.

1.10 Legacy of Ignited Childhood in Odisha

Experiences of childhood play an important role in human development. Childhood choices and memories guide interests and preferences in any stage of life. If childhood is affected by criticism, hostility, ridicule, shame, etc., children develop skills to condemn, fight, be shy and feel guilty. If childhood is nurtured by encouragement, tolerance, praise, acceptance, and approval, children develop confidence, patience, learn to appreciate, and love self and others.

Childhood in Odisha is nurtured by rich experiences based on Odisha's rich history, heritage and legacy. Odisha is known for its rich art (literature, song, dance, painting, etc.), science & technology (*boita*/boat making, temple architecture, etc.), mathematics, culture (year wide festivals, regional/folk and tribal culture, etc.), cuisines, attires, agriculture, traditional health care, different life-skills, and survival skills, etc. The Odia classical language is articulated in the form of innumerable stories, songs/poems, riddles, skits, proverbs, paintings, folk and

indigenous literature. Science and technology of the past is reflected in the famous temples, various scriptures including *Siddhanta Darpana*; mathematics is applied in astronomy, agriculture, etc.; and traditional health care knowledge depicted in '*Ghara Baida'*. Childhood across the state experiences these benefits from all these rich practices of the land discussed above.

Children enter school with varied contextual experiences. When school understands the child's context, education becomes rooted and meaningful. The State Curriculum Framework aims to center on children's diverse experiences and encourage teachers to count on the interests and skills of children from different backgrounds and facilitate learning in different subject areas in connection with local examples and innovations.

It is very important that whoever is connected to School Education understands the context and experiences of children. Following are some of the examples and experiences of childhood from Odisha, which need to be linked to content and processes of school pedagogy across stages.

Motivated by Stories of Courage: Each family in the state tells its children the popular stories of Dharmapada, who gave the finishing touch to the world-famous Sun temple at Konark and Baji Rout, who dared to stop the British intruders to protect own people at the cost of his life. This motivates children of all ages to dare and venture anywhere they work.

Inspired to Explore: Children get inspired by the story of meticulous astronomical measurements of stars and planets by Samanta Chandrashekhar, the famous Odia astronomer who using locally available materials went on to calculate the relative distance and speed of different celestial bodies visible in the sky. His creation '*Siddhanta Shiromani'* stands out as a classical astronomy book in the world of astronomy.

Lessons from Festivals: Each house in the state celebrates a wide range of festivals related to care of nature. There are festivals which familiarize children with the courageous ocean voyage of Odia mariners and their business colonies in Brahmadesh, Bali, Sumatra, Indonesia, Thailand, Myanmar and many other nations.

Participates in Folk Dances: Each part of Odisha performs traditional and folk dances with local songs in the form of *Sambalpuri, Dalkhai, Chhau, Gotipua, Chaiti Ghoda, Dhap, Ghumura, Medha Nacha,* etc. Children participate in their local dances learning the art from their communities. Odissi stands out as a state identity and encourages each child to learn the art through nearby Odissi centers.

Discovery of Art at Each Step: Childhood in the state is greatly enriched by the diverse and quality art work visible across the state. Each child grows amidst a culture of creating new things from the local stones, wood, roots, horns, metals, threads, and nature colours, etc. These beautiful creations are sold in the local markets and find appreciation and demand from different corners of the world. They learn these arts at home or in their community in all parts of the state. Children's hands-on skills are reflected in the houses, roads, temples and bridges they make in soil in all parts of the state. They also make and play with a wide range of toys they make with locally available materials.

Enjoys Language in Many Forms: Odisha is known for its rich stories, songs, poems, riddles,

skits, folk and tribal literature and unlimited innovative forms which are promoted in various forums throughout the year. Children across the state discover the multi-dimensional use of language. Odisha stands out as the first state in the nation which was formed on the basis of its rich language, culture and creativity. Odias love poetry and reflect many of their feelings through poems and songs.

Acquires Mathematical Insights: Children visit different temples, dams, artefacts, historical sites and get amazed by the mathematics and architecture involved in these creations. They get a lot of inspiration and ideas in this process. *Jhoti* drawn on floor and walls of each house in the state guides children to study mathematical patterns applied in these decorative depictions.

Revisits the Past: Each child by visiting different historical sights, museums, libraries and online resources get astonished by the rich history and heritage of the state in different times. They discover glimpses of it in their localities too in the form of temples, ancient scripts, rich cultural practices, folk dances and through discussion with seniors in their locality.

Imbibes Lessons from History: Unparallelled and dedicated fights of Odia *Paikas* in the historic Kalinga war, well-planned ocean journey of Odia *Sadhabas* in South-East Asia and beyond, the leadership of Kharavela and contemporary Odia Kings to defeat prominent kings and spread Kalinga from the Ganga to Godavari, and many such stories warm up the hearts of children with pride and inspiration. Each child is also greatly fascinated by the great leadership of Madhu Babu, Gopabandhu Das and many other leaders who dedicated their lives for the identity and dignity of Odisha.

Experiences Diverse Land Forms and Rich Life Around: Odisha has distinctly diverse land forms covering sea coast, mountains, and plain lands where life has evolved gorgeously with its art and cultures. This provides childhood a rich experience when children move around the state and learn its different features.

Crop Productions and Cuisines: Agriculture in Odisha produces a large range of grains, pulses, fruits, and vegetables. Odia families have great sense of rich and balanced food. They produce unique items such as *dalma, ghanta, khechudi, chhapan bhog, rasagola, chhenapoda*, etc. which reflect the great nutritional wisdom and culture of the state.

Benefits from Unique Healthcare System: Odisha has a rich tradition of contextual health care system in the form of Ayurveda, and other indigenous methods. Books such as '*Ghara Baida*' guide each family in the state to use local plants and other natural treasures for integrated health care from generation to generation. This contributes to children's sound health since their early childhood. These methods also encourage families to value seasonal fruits and vegetables, and balanced diet.

Rich History of Education: Odisha is the land of the Pushpagiri university, Satyabadi Bana Bidyalay, *Gurukula, Chatashali,* etc. which promoted quality education to people from all sectors. Content and processes of these reputed institutes have contributed to children's rich experiences in different times and they stand out as bright examples and inspirations.

Children with such varied experiences take pride in Odia culture, grow up and become adolescents. Odisha State Curriculum Framework, 2025 strongly advocates linking childhood experiences to their school learning. When a teacher connects children's experiences to their

curriculum, learning becomes contextual and meaningful. This links nicely to the five aims of school education stated in the NCF-SE, 2023 (p. 23)

i. It gives child scope to center on own legacy and make choices based on rational analysis, creativity, and a grounded understanding of the world (Aim 1: Rational Thought and Autonomy).

ii. It provides each child a healthy mind and a healthy body which are the foundations for an individual to pursue a good life and contribute meaningfully to society. School education would provide a wholesome experience for students, and they would acquire knowledge, capacities, and dispositions that keep their bodies and mind healthy and free from any forms of abuse (Aim 2: Health and Well-being).

iii. It would enrich each child's democratic and community participation. The Knowledge, Capacities, and Values and Dispositions developed would be oriented towards sustaining and improving the democratic functioning of the society (Aim 3: Democratic and Community Participation).

iv. It would ensure economic participation of each child. Effective participation in the economy would have positive impacts on the individual and on society. (Aim 4: Economic Participation).

v. It would enrich cultural participation of each child. Along with democracy and the economy, culture would play an important, if not central, role in the lives of all individuals and communities. Cultures would maintain continuity as well as change over time (Aim 5: Cultural Participation).

On the whole, the OSCF, 2025 would center on the local ethos and would aim to nurture healthy and knowledgeable individuals with desired capacities, values and dispositions so that they participate effectively and meaningfully in the community, economy, culture, and democracy, that would contribute to make India a pluralistic, prosperous, just, culturally vibrant and democratic knowledge society.

Key Takeaways

1. The entire system of school education in Odisha would touch upon attaining the five broad aims of education, viz., Rational Thought and Autonomy, Health and Well-being, Democratic and Community Participation, Economic Participation, and Cultural Participation.
2. The government of Odisha will adopt 5+3+3+4 curricular and pedagogical structure for school education with Foundational Stage for ages 3-8, Preparatory Stage for ages 8-11, Middle Stage for ages 11-14, and Secondary Stage for ages 14-18.
3. The 21st century learning skills and competencies like critical thinking, analytical thinking, creativity and innovativeness will cut across all the stages and curricular areas of school education.
4. The learning and assessment will shift its focus from rote memorization, testing facts and summative assessment to formative and adaptive assessment; and classroom

transactions will shift towards competency-based learning and education.

5. All Teacher Education Institutions should guide their pupil teachers to adopt the five-step learning model *(Panchapadi)* in preparing lesson plans with scope for flexibility and innovations.
6. Teachers need to follow differentiated instruction to address the needs of all students, including students with disability, varying learning styles, interests, and capabilities, for better learning.
7. The progress card needs to be a holistic and multidimensional report reflecting the progress as well as the uniqueness of each learner in the cognitive, affective, and psychomotor domains.
8. Contemporary subjects such as Artificial Intelligence, Design Thinking, Holistic Health, Organic Living, Environmental Education, Global Citizenship Education (GCED), etc. will be introduced at relevant stages to develop important skills in students.
9. The state will focus on attaining FLN, particularly on reading, writing, speaking, counting, arithmetic, and mathematical thinking.

Chapter 2

Cross-Cutting Themes

This chapter deals with certain themes which do not fall into any one curricular area but cut across the entire school system. It is important that all curriculum, pedagogy and assessment strategies, from the Foundational Stage onwards, must be designed to integrate these themes into the school system, considering the age of learners, societal ethos and contexts of the state, nation and the world as a whole, helping our children to become global citizens, aligned with the notion of 'Vasudhaiva Kutumbakam'.

Section 2.1

Rootedness in India and Indian Knowledge System

India is a land of rich diversity in its land mass, life (both animal and human), ethnicity, language, art (painting, music, dance, acting), culture, agriculture, attires, cuisine, medicine, and science and technology. Today, India is growing as a vibrant force in global economy adapting its own ancient philosophy and practices in tune with modern development processes with a unique constructive belief of *Vasudhaiva Kutumbakam* (The Universe is One Family). It is also home to deep knowledge and extensive practice in a variety of disciplines and fields, from language to mathematics, philosophy to art, grammar to astronomy, ecology to medicine, architecture to agriculture, ethics to governance, crafts to technologies, psychology to politics, literature to music, and economics to education.

Odisha is one of the leading states of the nation with its rich heritage, history, leadership, spiritualism, art and culture. Kalinga, the then Odisha, features in many of our ancient scriptures including Mahabharat. Odia poet Kabibara Radhanath Roy wrote '*Bharata pankaja dalamidamutkal mandal miti viditam yat*' (Odisha is a petal of the beautiful Bharat lotus flower). Odisha has a rich tradition of art, culture, heritage and value-based life style.

The NCF-FS, 2022 and NCF-SE, 2023 have clearly articulated that from the Foundational Stage onwards, curriculum and pedagogy would 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. Hence, stories, art, games, sports, examples, and problems must be chosen as much as possible to be rooted in the Indian and Odia geographic context. Ideas, abstractions, and creativity will indeed best flourish amongst our students and teachers when learning is thus rooted. This SCF aims to be strongly rooted in the context of India and Odisha as well. The following points are enumerated in the SCF.

i. A holistic vision of education and its aims, from our ancient heritage to our modern thinkers, informs the overall approach of the SCF.

ii. The core of the *guru-shishya* tradition as a base for the centrality of the teacher-student relationship for effective learning; and the tradition of dialogue and debate as the best way to acquire knowledge and wisdom.

iii. The use of local resources for learning, including language, practices, experts, histories, environment, and more, as rich sources of illustrations or case studies.

iv. The importance of the involvement of parents and communities in education.

v. Educational content, such as stories, art, games, sports, examples, and problems, chosen as much as possible to be rooted in the Indian and Odia geographic context, in order to maximize creativity, comprehension, relatability, relevance, and the flourishing of ideas in the classroom.

vi. The rich history of Indian and Odia contributions to various fields (also referred to as Indian Knowledge Systems) is incorporated throughout the curriculum, as this not only develops pride and self-confidence, but also enriches learning in different subject areas.

2.1.1 Vision of Education

Indian vision of education has always been both broad and deep, including the idea that education must foster both inner and external development. The SCF centers on the ancient Indian educational wisdom and modern educational research. In Indian philosophy, the pursuit of knowledge (*Jnana*), wisdom (*Prajna*), and truth (*Satya*) was always considered as the highest human goal. The aim of education in ancient India was not just the acquisition of knowledge as preparation for life in this world or life beyond schooling, but for the complete realization and liberation of the self.

Our education system produced great scholars like Charaka, Susruta, Aryabhatta, Varahamihira, Bhaskaracharya, Brahmagupta, Chanakya, Chakrapani Datta, Madhava, Panini, Patanjali, Nagarjuna, Gautama, Pingala, Sankardev, Maitreyi, Gargi and Thiruvalluvar, Sankha, Likhita, Shatananda, Shubhankara, Jayadeva, Vidyadhar, Viswanath Kaviraj, Gadadhar Rajguru, Indrabhuti, Padmasambhaba, Sarala Das, Atibadi Jaganatha Das, Krupasiddha, Bala Rama Das, Hari Nayak, Krushnadas, Badjena Mohapatra, Harichandan, Shreedharswami, Baldev Bidyabhusan, Samanta Chandrasekhar (Pathani Samanta), Jagadguru Bharatikrishna Tirtha, Kabisamrat Upendra Bhanja, Gopal Chandra Praharaj, Pandit Sadasiva Mishra, Dayanidhi Khadiratna, Pandit Mrutyunjaya Acharya, etc. among

numerous others, who made seminal contributions to world knowledge in diverse fields, such as mathematics, astronomy, metallurgy, medical science and surgery, civil engineering, architecture, shipbuilding and navigation, yoga, fine arts, chess, and more. Indian culture and philosophy had a strong influence on the world.

These rich legacies to world heritage must not only be nurtured and preserved for posterity, but also researched, enhanced, and put to new uses through our education system. Instilling knowledge and wisdom of India and their varied social, cultural, and technological needs, their inimitable artistic, language, and knowledge traditions, and their strong ethics in India's young people, are considered critical for purposes of national pride, self-confidence, self-knowledge, cooperation, and integration.

Our traditional system of education, one of the oldest in the world, founded on the teacher-student inter-relationship, fostered holistic development and transmission of knowledge. Debates, dialogues and discussions were the primary modes of learning and assessment. Teachers were often assisted by their senior students. Older students, more advanced in their learning, often taught younger and newer students. Collaborative and peer learning was encouraged. This traditional system was our *Gurukul* system.

2.1.2 Ancient *Gurukul* System

The *Gurukul* system of education in ancient India was a traditional, residential learning system where *Shishyas* (students) lived with their *Guru* (teacher) in a scheduled environment focusing on holistic development through both academic and practical learning. *Gurukulas* were typically located in serene, natural environments away from urban centres, fostering a focused learning atmosphere.

The *Guru-Shishya* (teacher-student) relationship was based on mutual respect and dedication. The *Guru* with self-realized and earned knowledge and skills guided the students through studies and activities for their academic and personal development. The day-to-day routine for a *Gurukul* included waking up at early hours, followed by meditation, rigorous studies and community living. Every student of *Gurukul* was expected to keep the *Gurukul* and its surroundings clean and take care of their belongings. All students were expected to wash their own clothes. Simple vegetarian meals were served in the *Gurukul*.

The *Gurukul* system aimed at holistic development in discipline, life skills and values through personalized learning and bonding between the teacher and the student. Here, the teacher was a mentor and guide of the students. *Gurukul* education encouraged practical learning where students learned by direct action, experiments and observation instead of merely absorbing information. *Gurukul* teaching methods encompassed a wide range of approaches including teacher-centered, bearer-centered, context-focused and interactive methods each with unique strengths and applications. The curriculum encompassed a wide range of subjects, including academics, moral values, ethics, life skills and spiritual practices, aiming for well-rounded individuals. Students learned through practical activities and engagement in daily life relying on theoretical knowledge.

Eighteen subjects taught in the *Gurukul* included fourteen *vidyas* and four *Upa-Vedas*. Four *Vedas* (*Rig, Yajur, Sama, Atharva*), six *Vedangas* [*Shiksha*-Phonetics, *Vyakarana* (Grammar), *Chhanda* (Prosody), *Nirukta* (Etymology), *Jyotish* (Astronomy & Astrology), *Kalpa* (Rituals, Construction & Vedic Mathematics)], *Puranas* (Source of History & Customs), *Mimansa*, *Nyaya* and *Dharmasastra* (Sociology, Law & Jurisprudence). Four *Upa-Vedas* included *Ayurveda, Dhanurveda, Arthasastra* (polity, economics, trade and commerce, agriculture, animal husbandry & *shilpa sastra*), and *Gandharva Veda* (drama, dramaturgy, music, dance and instrumental music). These *Vidyas* were associated with four goals of human life, such as *Dharma, Artha, Kama* (64 fine arts) and *Moksha* (*Upanishad* and other *Darshan Sastras*). Knowledge was shared from generations to generations orally ensuring its preservation and transmission. The *Gurukul*a system left a lasting impact on the Indian education system emphasizing the importance of a strong teacher-student bond, holistic education and practical learning.

Education focused on the moral, physical, spiritual, and intellectual aspects of life emphasizing values such as humility, truthfulness, discipline, self-reliance, and respect for all. There was a strong emphasis on appreciating the balance between human beings and nature. It was understood that the individual's well-being is dependent on the well-being of the world around them. Sources of learning were drawn from various disciplines, such as language and grammar, philosophy, logic, history, architecture, commerce, governance, agriculture, trade, archery. Creative arts developed a sense of aesthetics and sensitiveness to beauty in all aspects of life. 'Physical education and well-being' was an important curricular area with learning of games, martial skills, and yoga, so as to include the body in a complete education.

Thus, education was seen as the integral growth of *Pancha Kosha* (the five levels or parts of our being), an ancient Indian concept which explains the body-mind complexity in human experience and understanding. This is also a pragmatic perspective, achievable and complementary to life, developing good physical health and socio-emotional skills along with developing the ability to think and make ethical and rational choices and decisions in life.

In the 19th and 20th centuries, many great modern Indian thinkers and personalities, such as Savitribai Phule and Jyotiba Phule, Rabindranath Tagore, Swami Vivekananda, Mahatma Gandhi, Sri Aurobindo, Jiddu Krishnamurti, Giju Bhai Badheka, and Gopabandhu Das, emphasized the need for India to develop her 'national system of education', with its roots in our intellectual and artistic heritage. The SCF underpins the philosophies of education of these luminaries.

2.1.3 Holistic Development *(Samagra Vikash)* of Students

The Indian philosophy of education gives importance to *Vyaktitwa Vikash*. *Vyaktitwa* in the *Upanishads* and other scriptures means development of the *Pancha Koshas* (five sheaths). According to the Indian philosophy, education cleanses and develops the human life systematically.

Education aims at balancing the *Vyaktitwa* and developing it from all perspectives. Education develops the inner and outer faculties of an individual in a holistic manner. Holistic education incorporates the development of *Śhareera* (body), *Prana* (vitality), *Manas* (mind), *Buddhi*

(intellect), *Ahankara* (ego) and *Chitta* (the unconscious). There is discussion about this in various Indian scriptures. In *Kathopanishad*, Yama narrates this to Nachiketa through a metaphor, and in Bhagavad Geeta Shri Krishna explains this to Arjuna in the battlefield.

Indian philosophy considers man not just as a body that holds a bundle of desires, but as a part of the whole of the all-pervading consciousness. The Indian education system never aims at achieving the material development only. It aims at the holistic development of *Shareera* (body), *Prana* (vitality), *Manas* (mind), *Buddhi* (intellect), *Ahankara* (ego) and *Chitta* (the unconscious) of the individual and trains the individual to achieve its goal of realizing the fact that the whole universe is a family and the individual is a part of it. This is the development of the *Pancha Koshas* of an individual.

The *Pancha Koshas* are the *Annamaya Kosha*, the *Pranamaya Kosha*, the *Manomaya Kosha*, the *Vijnanamaya Kosha* and the *Anandamaya Kosha*. *Kosha* or sheath means cover. The *Jivatma* (soul) is covered by these *Koshas*. The holistic development aims not only at the integrated development of *Vyasti* (an individual), but also at some higher levels such as *Samasti* (the society), *Sristi* (the creation) and *Paramesti* (the creator). Every stakeholder is ingrained in the process of development of an individual.

The process starts from a point in the form of an individual, but grows to the level of the society, then to the creation and then to the creator. This shifting of the levels takes place in a spiral manner that connects each level with an ever-growing circle, always connected at the micro level, but simultaneously transpiring to the higher levels and achieving the macro level too. The lower identity gets assimilated at the next higher level seamlessly. This process continues to connect the lower levels with the higher levels too, by way creating an unbroken spiral chain.

1. *Annamaya Kosha* (gross body): It is the visible aspect of an individual. The physical body is supported by balanced diet, adequate exercise, sufficient sleep, regular activities, cleanliness, physical activities, mental quietude and pleasant attitude. The balanced development of all such aspects is the development of the physical body. This keeps the body free from all ailments—physical and mental.
2. *Pranamaya Kosha* (vital sheath): The body is a machine which needs fuel to run. The fuel of our body is prana or the breath. The body and the soul remain together till the breath remains in the body. The breath is nothing but vitality in a body. The vital energy is subtler than the physical body. The breath is prevalent throughout the whole physical body. Any organ deprived of such vital energy will stop functioning. Breath sustains prana by carrying the vital force. Breath drives the vital force in all the physical organs and keeps it alive. This vital force is developed in order to make it strong and effective. The aim of its development is nothing but to keep the prana balanced and concentrated. The *Pranamaya Kosha* stays balanced and effective through pranayama, the fourth limb of the eight-fold yogic process.
3. *Manomaya Kosha* (*manas*, psychic sheath or emotional cover): It controls the five senses of cognition and action. It also engages them in all activities. The five senses of cognition are connected to the intellect and the five senses of action are connected

to the body. The manas is subtler than the prana. The mind is always unstable, disturbed, attached, binary, absorbed in thought. These are the basic features of mind. Hence the development of the mind consists of training to tame, control, concentrate, detach, unify, and cleanse it by the intellect. In order to develop this, one has to practice yoga, music, and take good food, find good association.

4. *Vijnanamaya Kosha* (intellectual sheath): This sheath represents the intellect and is subtler than the mind. The intellect has cognitive power which is associated with the faculty of knowledge. The intellect observes, examines, analyses, synthesizes, argues, compares, predicts, weighs and ponders while taking decisions. The development of this *Kosha* involves all intellectual pursuits such as reception, retention, imagination, observation, examination, argumentation, prediction, analysis and synthesis of facts. Developing these faculties through regular and repetitive intellectual pursuits with studiousness, inquiry, service, devotion leads to the development of the *Vijnanamaya Kosha*. Taming the intellect is a sadhana.

5. *Anandamaya Kosha* (sheath of bliss): This is the subtlest part of the inner self. But it is the broadest and the most refined than the other sheaths. This is often called Chitta. It is the nearest definition of the 'Self' or the essential part of an individual. From here the study of Truth of Self (*atma tattwa*) starts. It is called Pure Being (*Sabala Brahma*) in the discipline of Yoga. Chitta is replete with bliss, love, beauty, fearlessness, freedom and ease. Bliss is not happiness of the lowest category derived from the mundane activities. *Chitta* tends to love all creatures without any purpose behind it. Hence, the development of *Chitta* leads to the development of the *Anandamaya Kosha*. It has a two-fold path: (a) the cleansing of *Chitta*, and (b) attaining the original mood. This can be developed through sacrifice, love, meditative absorption (*samadhi*) and devotion (*bhakti*) along with intake of pure food.

Thus, the development of all the *Koshas* is required for the all-round development of the personality of an individual. All the factors responsible for the development of these *Koshas* should be incorporated in the curriculum. This will ensure the personality development of an individual based on the development of these *Koshas* that coexist. They are not separate from each other. This integrated and holistic development of all these *Koshas* leads to their mutual development. These *Koshas* agree with each other and influence each other. Such an ambience within an individual leads to the integrated development of an individual. Thus, the individual achieves liberation of the self and the society and also gets the benefit of higher potentiality. The individual transcends his identities related to his *Shareera* (body), *Prana* (vitality), Manas (mind), *Buddhi* (intellect), *Ahankara* (ego) and *Chitta* (the unconscious), and achieves the highest ever identity of his being a part of the highest ever consciousness. This is beneficial to both the entities - the individual as well as the society.

The holistic development aims not only at the integrated development of *Vyasti* (an individual), but also at some higher levels such as *Samasti* (the society), *Sristi* (the creation) and *Paramesti* (the creator). Every stakeholder is ingrained in the process of development of an individual. The process starts from a point in the form of an individual, but grows to the level of the society, then to the creation and then to the creator. This shifting of the levels

takes place in a spiral manner that connects each level with an ever-growing circle, always connected at the micro level, but simultaneously transpiring to the higher levels and achieving the macro level too. The lower identity gets assimilated at the next higher level seamlessly. This process continues to connect the lower levels with the higher levels too, by the way creating an unbroken gyre. By thus connecting, the individual attains fulfillment; life gets happiness and meaning.

1. *Vyastigata Vikas* (Individual Development): The life of *Vyasti* (an individual) extends from birth to death. The '*Panchakoshatmaka Vikas'* of personality grows gradually and helps an individual to complete a fulfilling life. This development is integral in nature. Hence, the academic activities must be designed in a manner that the curriculum, the syllabus, textbooks, and the pedagogy should get aligned with the integral aspect of personality development. The society and the government should make policies for the individual to make him independent, self-reliant, intelligent, powerful, valiant and skillful. *Vyasti* (an individual) must be trained to live not only for the self, but for the family, the society, the country and the world.

2. *Samastigata Vikas* (Development of Family): An individual, how much able he may be, has to depend upon others for certain. His happiness and sorrow are shaped by his connection with others. The whole humanity includes the family, the immediate neighbours, the nation and the world. An individual cannot sustain all alone. The family confirms blood relations. An individual connects to the family effortlessly as it gives him identity, security and emotional unity. An individual must, therefore, know the family traditions, rituals, mindsets, ambience and historicity.

   The Samaj (society) unites families, as they are the part and parcel of the greater society. It provides the individual friendship, association, income, education, medical care and much more. An individual learns how to maintain social obligations, provide services to others, helps retain roles within the society, and expresses the common identity through symbols and institutions that, in turn, express the inner strength.

   The society is included in the *Rastra* (nation). Hence the society reflects the larger national interest too, and upkeeps them for, a larger interest. The individual directly connects to the land and fulfills all obligations by his active participation. Moreover, an individual should extend his help to the government and work for the upkeep of *samskruti* (culture), *kala* (art), *dharma* (way of life) and the vision and mission incorporated in the constitution.

   An individual should connect to the whole world, as the world is a larger family. Hence, any development in an individual regarding the universe is expected in the line of developing fraternity and aspiring peace and welfare among all. A nation therefore needs to connect all other nations as a friend. Enimity should go lock, stock and barrel. There are certain concepts like internationalization, globalization, etc. which are prevalent in the world. But they are not equal to the Indian concept of *Vasudhaiva Kutumbakam* 'the world as a family', that ensures a family-like relationship and connectivity. Developing such ideas in an individual is the goal of true education. It is expected that an individual must develop holistically incorporating the 'other'.

3. *Srustigata Vikas* (Development of the Creation): The creation is the proliferation of the creator. The 'One' became the five elements of nature, the stars, the planets, flora, fauna, and all others visible and invisible, active and inert, mind and matter, everything. As the creation bears the testimony of that ultimate truth as material, the individual should get attached to it emotionally. As the individual is benefitted by the elements of nature s/he should remain faithful to it. A person should not exploit nature, but should protect it and preserve it.

4. *Parameshtigata Vikas* (In tune with the Creator): It is well accepted truth that the Creator is manifested as the creation. The material used to create the universe is called the *Brahma*. So, the individual should see that the *Brahma* within himself and in everything around him. Envisioning such a concept is the realization of the Ultimate Truth. The Indian (Bharatiya) tradition enshrines this concept in all its prayers and peace pronouncements. This should be the natural instinct in all. This is supported by the sages through ages. They have realized this through their *sadhana*. The individual must follow it up. Knowing this, and behaving accordingly, will result in the development of the highest kind.

The chief goal of education is nothing but liberation of the individual soul while serving the cause of the universe. Liberation is nothing but universalization of the individual. Hence true education bestows liberation - सा विद्या या बिमुक्तये. The seven steps to reach liberation are *Vyakti* (individual), *Parivar* (family), *Samaj* (society), *Rashtra* (nation), *Vishwa* (world), *Srushti* (nature), and *Parameshti* (ultimate reality).

Yoga and the connected human journey: In the ancient Indian conception, Yoga (literally, 'union') is a system of self-exploration, self-mastery, self-discovery or indeed discovery of the self (*atman*). Through Yoga, the human being associates with all the elements, understands and gradually moves ahead with the integrated awareness.

2.1.4 IKS Integration in SCF

The approach to rootedness in India in this SCF involves: (a) our vision of the aims of education; (b) a vibrant epistemic approach; (c) a positive and nurturing teacher-student relationship; (d) deep engagement of families and communities; (e) judicious use of local resources; (f) curriculum content carefully chosen according to the Indian and Odia context of the students; and (g) the incorporation of knowledge of India - including Indian Knowledge Systems.

This SCF, rooted in the Indian vision of education, emphasizes the holistic development of every child. This includes physical development, socio-emotional development, intellectual development, spiritual growth, and development of values and dispositions. All the domains of development are seen as critical and equally important for human development and flourishing. The design of this SCF reflects the above approach with a range of Curricular Areas being part of school education such as Mathematics, Languages, Science, Social Science, Art Education, Vocational Education, Physical Education and Well-being and Interdisciplinary Areas such as Environmental Education and Value Education. All Curricular Areas are seen as equally important for a child's learning and development. Hence, equal importance should be given on

the choice of content, the pedagogical approaches, the assessment strategies and the time allocated to each of these areas in the school day.

One of the central aims of the Indian vision of education is character building. The SCF emphasizes this through the development of values throughout the school years from early childhood onwards. Values and dispositions are developed through school and classroom culture and practices and through the learning of different subjects in the curriculum. These values are an integral part of our tradition (e.g., *seva, ahimsa, nishkam karma*), and part of our modern Constitution (e.g., commitment to equality, to justice, to the protection of the environment).

The Satyabadi Vana Vidyalaya of Odisha

Satyabadi Vana Vidyalaya, established by Utkalmani Gopabandhu Dash in 1909 at Sakhigopal, with Pandit Nilakantha Dash as the headmaster, and Acharya Harihar Dash, Pandit Godabarish Mishra and Krupasindhu Mishra, as teachers, is situated in the Puri district of Odisha. These five dedicated teachers are popularly known as the *Panchasakha* of Satyabadi. As an experiment in nationalist education, this open-air school began its journey with 19 students, with the broad aim to cultivate patriotism in the hearts of the students, thereby converting it to a man-making industry. With the passage of time, the school gained popularity for its modern and traditional ways of teaching and learning, emphasizing intimate teacher-student bonding in the ancient *Gurukul* system. Many students from this *Vidyalaya* went to join the freedom movement in Bharat. In its glorious past, the school stood as a model for other schools, and now has become a destination of visit for students and teachers, for carrying the heritage of good education.

Along with values, the SCF emphasizes developing particular dispositions including a positive work ethic (e.g., being responsible, exerting oneself, pursuing quality and honesty in one's work, having respect towards all manners of work). The theory of knowledge, or *pramana-shastra*, is one of the richest areas of classical Indian philosophy, spanning several centuries and rife with the liveliest debates. Furthermore, questions about knowledge are almost inextricable from other fundamental questions about the nature of reality (metaphysics) and language.

The debates and approaches express themselves in the current scientific methods and the methods of the various disciplines; their nuances enrich our current thinking on 'how we know,' 'what is it we know,' 'what is true,' 'what is adequate knowledge', and more. Much of this nuance informs the Nature of Knowledge section of Curricular Areas. To do justice to this tradition of questioning and debate, the SCF insists on the absolute authenticity of all educational material used in imparting rootedness in India.

Teacher-Student Relationship for Effective Learning: One of the most significant principles of our vision of education is the importance given to the relationship between teacher and student. Based on this principle, this SCF emphasizes a positive and nurturing relationship between teacher and student that is enriching both for cognitive and socio-emotional-ethical development. This relationship is nurtured and strengthened through different practices and processes.

This positive relationship is developed mainly through teachers getting to know each student individually, observing and listening to them carefully, encouraging their questions and responses, and recognizing and responding to their thoughts and emotions.

Pedagogical approaches and classroom practices may alter as students grow and their ways of learning change, but irrespective of that, they are always based on this bedrock of a positive and nurturing relationship between the teacher and the student. In particular, this relationship will be anchored in the value system which the teacher is expected to embody; this system rests on empathy and patience and promotes self-discipline in the student.

The best example of teacher-student relationship was the Satyabadi Vana Vidyalaya, established by Utkalmani Gopabandhu Dash. This relationship is cultivated presently in the schools, namely Saraswati Shishu Mandir of Vidya Bharati.

Engagement of Families and Communities: This SCF emphasizes on the important role of families and communities in a student's overall development and learning. Teachers and families would work together to understand each child better and create a more positive experience for the students collectively. In this process they get acquainted with the school processes. Teachers also understand a child's home environment. This helps them to plan appropriate learning experiences for each student. By sharing and working together, teachers and families support the child's development across all domains. This kind of involvement helps families support the learning experiences that happen in school through good practices at home as well. Families also contribute to assessing the child's progress and areas of need. They also gain further confidence in their own parenting abilities in this process. These measures help home and school to be more synergetic, positive, and productive for each student.

Local Learning Resources: The use of locally rooted resources for learning is not only more cost effective, eco-friendly, and supportive for local communities, but also pedagogically more effective. It results in development and facilitation of appropriate curricular content and pedagogy that is more relatable and interesting to the student, which in turn leads to better learning. Learning-Teaching Materials (LTMs) are thus most effective when they are locally sourced and designed. This includes both physical items such as toys, books, games, sports equipment, vocational education equipment, art and craft materials, materials for science experiments, parts of local plants and flowers, as well as non-physical items such as stories, poems, songs, and festivals. Trips to places such as local parks, monuments, shops, businesses, and educational institutions also are considered effective local learning resources at appropriate junctures in the curriculum.

Content Selected from the Indian Context: Learning happens best when it is situated and rooted in the student's context. While contemporary ideas of teaching and learning are an important part of the curriculum framework, it is also extremely important that diverse experiences of children, their families, and their communities find a crucial place in their learning processes in and around school. Ideas, abstractions, and creativity best flourish when learning is thus rooted. The SCF foregrounds the child's context as critical to learning all through the school years, with particular emphasis in the early years of a child's life in school. Local stories, songs, food, clothes, art, and music are an integral part of the learning experiences of students in school in order to ensure that education is maximally relatable, relevant, interesting and effective for children. Thus, educational content, such as stories, art, games, sports, examples, and problems, will be chosen, to the extent possible, to be rooted in the Indian

and Odia geographic context, to ensure maximal creativity, comprehension, relatability, relevance, and flourishing of ideas in the classroom.

Integration of Knowledge of India: Building both pride and rootedness in Indian and Odisha context also is a fundamental disposition that is to be developed throughout school education. This happens primarily through building deep familiarity with our rich heritage, which includes our contributions to knowledge across all disciplines and fields of study from time immemorial. Building pride and rootedness in India is a focus across all Curricular Areas but should be achieved as a natural by-product of exposing the child to this heritage and 'Knowledge of India' including knowledge Odisha.

Knowledge of India will include knowledge from ancient India and its contributions to modern India and its successes and challenges, and a clear sense of our future aspirations with regard to education, health, environment, etc. These elements will be incorporated in an accurate and scientific manner throughout the school curriculum wherever relevant.

In particular, Indian Knowledge Systems, including tribal knowledge and indigenous and traditional ways of learning, will be covered and included in mathematics, philosophy, yoga, architecture, medicine, agriculture, engineering, linguistics, literature, sports, games, as well as in governance, polity, and conservation, where it is relevant. Tribal ethno-medicinal practices, forest management, traditional (organic) crop cultivation, natural farming, etc. will be incorporated wherever possible and relevant. Thus, Indian Knowledge Systems here refer to all the systematized disciplines of knowledge that were developed to a high degree of sophistication in India, and also all of the traditions and practices, which various communities of India - including tribal communities - have evolved, refined, and preserved over generations. An engaging course on Indian Knowledge Systems will also be available to students in secondary school as an elective.

School culture and processes will also help to strengthen knowledge of and connection to country, such as through every day practices and activities in and around School Assembly and through special events and festivals like Independence Day and Republic Day, Saraswati Puja, Shri Ganesh Puja, etc. that reinforce pride in the country and its art and heritage, understanding of our struggle for independence, and the importance of preserving and protecting our independence.

Key Takeaways

1. The Knowledge of India, which includes knowledge from ancient and modern India, tribal knowledge, with regard to education, health, agriculture, environment, etc. will be incorporated in an accurate and scientific manner throughout the school curriculum wherever relevant.
2. The rich heritage of India and Odisha in the field of history, leadership, spiritualism, art and culture, value-based life style, will be integrated into curricula across all stages of school education.
3. Stories, art, games, sports, examples, and problems, rooted in the Indian and Odia geographic context, must be chosen as much as possible and integrated in school

curriculum.

4. The use of locally rooted learning resources such as toys, books, games, sports equipment, vocational education equipment, art and craft materials, etc. will be incorporated in an accurate and scientific manner in the school curriculum wherever relevant
5. The intimate attachment between students and teachers (*guru-shishya*) practiced in heritage education institutions (e.g., *Satyabadi Vana Vidyalaya*) and ancient education system (e.g., *Gurukul*) will be reflected in school curriculum across all stages through stories, poems, essays, and case studies, etc.

Section 2.2

Values and Dispositions

"…….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, Introduction, p. 5]

Developing Values and Dispositions is critical to attaining the Aims of Education. The coherent set of Values and Dispositions to be developed are derived from NEP-2020, which in turn are informed by India's Constitutional values and broader human values, including those that arise from India's deep cultural heritage, worldview, and elaborate ethical systems. The process and the content of education across all Stages will aim to develop in all students these Values and Dispositions, and the Capacities for their practice. Some of these values are democratic outlook and commitment to liberty and freedom; striving for equality, justice, and fairness; embracing diversity, plurality, and inclusion while remaining conscious of our underlying unity; humaneness, compassion, empathy, and fraternal spirit; responsibilities that come from freedom and rights; social responsibility and the spirit of *Seva* (service); ethics of integrity and honesty; self-discipline; equanimity in the face of success or failure; scientific temper and commitment to rational and public dialogue; patience and persistence; humility; peace; social action through Constitutional means; respect and care for the environment and nature; sense of aesthetics; respect for India's cultural heritage; unity and integrity of the nation; and a true rootedness and pride in India with a forward looking spirit to continuously improve as a nation.

2.2.1 Approach to Developing Values and Dispositions

The approach of this SCF is to aim to develop Values and Dispositions using both direct and indirect methods. In the direct method, there will be classroom activities, discussions, and readings specifically designed to address the Values and Dispositions. In addition, a course on 'Moral and Ethical Reasoning' will be introduced for all students in Grade 9. In the indirect method, the contents of languages, literature, science and the social sciences will incorporate discussions aimed at addressing Values and Dispositions. At the *Foundational Stage*, the learning of Values and Dispositions are embedded in the selection of content, pedagogical approaches, and assessment tools. At the *Preparatory Stage*, emphasis will be on developing positive habits (e.g., emphasizing on completion of given work and putting things back in their place as a part of classroom practice). In the *Middle Stage*, the emphasis will be on collaborative groupwork as part of classroom practice which helps develop the ability to work in teams. In the *Secondary Stage*, the emphasis on giving critical feedback on work done would help develop the ability to handle criticism and praise, success, and failure with equanimity.

Values and dispositions are best learnt and imbibed when experienced and seen by students in practice in real life. Emphasis will be on building, sustaining, and enriching school culture and practices which immerse the students in desirable values. It is the responsibility of the school,

from the management and leadership to the Teachers and other school workers, to provide an enabling environment for practising values and developing dispositions. Building of a caring, collaborative, and inclusive school and classroom culture and practices is the most effective way of developing values and dispositions.

Each of the above processes helps to develop different kinds of values. Illustratively, regular dialogue and discussion with active listening as part of classroom culture and processes help develop democratic values, such as, commitment to equality and justice, as well as, rational thinking and sensitivity in dealing with fellow humans. Marking important days through community service help to build cultural values, such as, *Seva, Ahimsa*, and *Shanti*.

The content, both implicit and explicit will support the development of desired values. All implicit content choices have deep implications for the learning process. For example, diversity in the choices of names of people, vocations, and geographical areas of India used and depicted in textbooks and illustrations, should be given attention throughout. Inspiring lessons from the works of literature and the people of India must be incorporated throughout the curriculum. Discussions on the Indian Constitution, the values of Equality, Equity, Liberty, and Fraternity; and the Fundamental Duties of Indian citizens must be a part of classroom processes. Stories from the lives of great Indian heroes of history are also an excellent way to inspire and introduce core values to students.

One of the critical issues that schools often face is that the values recognised or encouraged at school may not be seen or practised outside of the school; and the school has very little or no control over what happens in students' lives outside of it. For example, gender sensitivity is taught and encouraged in school but students may sometimes see the opposite within their families or communities. How will a school handle this conflict? This question does not have a simple answer. Teachers would need to help students listen and observe carefully, not jump to conclusions, ask questions politely, study the issue, and learn about it in some depth before deciding on a response.

2.2.2 Values and Dispositions across Subjects

Art Education across stages focusses on thinking, aesthetic sensitivity, making, patience, and creative appreciation. Students get exposure to artists from their own community as well as those from different parts of India. Knowledge and appreciation of art traditions and unique approaches and artwork help them appreciate the richness and beauty of thought and expression across cultures. This helps them realise that multiple perspectives and interpretations can coexist in their own classroom; so the same would hold true for society too. The 'making' process lends itself to the inculcation of values. For example, making string puppets and then playing with them to perform a variety of actions to narrate a story requires practice and hard work, while also being a joyful experience. As students work with a variety of art forms and techniques, they will develop an appreciation for hard work and an understanding of the time, effort, and practice required to achieve quality artwork. With such experiences, students would develop respect for all kinds of vocations, professions, and work, as well as respect for all people. The value of liberty and freedom is best experienced when students create and express themselves openly through their artwork. A student who may experience shyness, stage fear,

or any other kind of discomfort with their own body can express their experiences and challenges during the process of learning Dance and Movement. This develops greater understanding among students and respect for all people regardless of their capacities and background. Such processes also allow all students to feel included as equal contributors in the learning process.

Science across stages provides students with opportunities to explore their observations and experiences in the real world. Students must identify and appreciate scientific values, for example, creativity, objectivity, rational thinking, perseverance, cooperation, scepticism, through 'doing', as well as, engaging with specific examples. These examples will be related to the development of scientific laws and theories, and the lives and work of a few scientists in some detail. Students will examine how ideas have changed over time in light of new evidence, leading to an understanding of the tentative nature of science, and the role of empiricism in developing scientific knowledge. Students must also develop a holistic understanding of science through seeing its interconnectedness with the real world as well as with other Curricular Areas. While appreciating how science and technology have contributed to human lives, they will also examine their use from the lens of ethics, which may appropriately include discussions on the limits of science and technology when their applications are not governed by appropriate values.

Interdisciplinary Areas include building sensitivity and care towards the environment and developing the capacity for moral and ethical reasoning. Students will be encouraged to explore, appreciate, and develop sensitivity towards their social and natural environment. They will appreciate the need for balance and harmony between human society and nature. They will develop a sense of care not only for themselves, but also for other humans, plants, birds, and animals as well as the rest of the natural environment. Students will also develop capacities for ethical and moral reasoning, and active participation as citizens in debate and action. They will be able to examine from multiple perspectives, identify ethical and moral questions and dilemmas, and evaluate them for violation of human and Constitutional values.

Physical Education and Well-being across stages will help students value physical activity, hygiene, nutrition, and diet for a healthy life. It will also encourage inclusion, cooperation, and responsible behavior, quick decision making, respect for all players including opponents and fair play, gracious acceptance of both victory and defeat, and commitment, perseverance, and hard work to achieve excellence. Sports provide opportunities to reflect on personal and team behavior, and help build dispositions helpful for working in teams. Students will also learn to modify a game or create new ones to include those who may have different needs and abilities.

Mathematics across stages will develop capacities for logical thinking and reasoning in an accurate, objective, and rational manner. Through participation in the discovery of patterns and relationships and the derivation and proof of principles and theorems, they will learn the value of collaboration, creativity, and perseverance. They will also learn the value of communicating their ideas clearly and precisely.

Language across stages will help students develop democratic and epistemic values, and dispositions of respect for culture and diversity in society. Learning more than one language will broaden students' horizons and will enable a deeper connection with the country and

develop a sense of pride and belonging to the country. Students will be encouraged to think independently, take interest in reading books and develop an attitude for gaining knowledge. They will also develop the ability to express themselves, organizing thinking, and creative expression. Students will develop deeper capacities for effective communication and will appreciate the value of meaningful and effective social and democratic participation. Students will learn an appreciation of aesthetics in different genres, use language to develop reasoning and argumentation and an appreciation for different regional languages in the country.

Social Sciences across stages will focus on inculcating epistemic values of scientific rigour in the analysis of events, and the interpretation of sources related to different aspects of human life and society. Globally accepted scientific methods of enquiry, such as, the evidence-based, empirical, and verifiable approaches to social, historical, and political events ensure the development of this epistemic value. Appreciation for Indianness (Bharatiyata) through an understanding of India's rich past, that includes its cultural diversity, heritage, traditions, literature, art, philosophy, and medicine, and learning about the geographical diversity of the Indian subcontinent is an important Curricular Goal. Similarly, understanding the functioning and impact of social and political institutions, and learning about various forms of inequality and discrimination will contribute to social and democratic values of equality, justice, fairness, and inclusion. Students will learn the process of development of the Constitution of India, the emergence of the modern Indian state, and the importance of these in the promotion of democratic values, culture, and biodiversity.

Vocational Education helps students learn and respect the value of *shrama* or physical work, respect for all and their capabilities regardless of background, and respect for the environment. It will prepare students for meaningful and productive participation in the world of work by learning hands-on abilities and skills developing equal respect for head-hands-heart, valuing the dignity of labour, and understanding vocational choices for the future. Students will develop a broad-based understanding of different forms of work. The disposition of working hard with persistence, focus, and attention to detail is an important component of work ethic.

2.2.3 Assessment of Values and Dispositions

Assessment of values must not be for judging the student but must be only a developmental exercise. Any use of such assessment for 'judging' is likely to do deep harm. Careful and objective observation would be critical to the assessment of developing values and dispositions. The focus of assessment must be on the 'behaviour' that demonstrates the value or the disposition. The rubrics need to be very carefully developed avoiding all biases, and ensuring that these can be practically implemented by Teachers. This should form a part of the periodic learning assessment report. The rubrics, the report, the reflective diary or the materials developed by students must be constructive and must ensure that they do not have any kind of negative effect on students or their families. In the Secondary Stage, assessment could additionally include creative short essays in class (e.g., asking for comments on a text) or projects. Self and peer assessment of projects or expositions would be an excellent practice which provides training in objectivity and impartiality.

Since Values and Dispositions will not be acquired if the student fails to perceive the Teacher and the whole school as embodiments of those values, innovative exercises to get the Teacher and the school management assessed by the students could be undertaken. This may be done through anonymous questionnaires that will not only ask specific questions and also invite constructive students' feedback and suggestions.

Key Takeaways

1. The approach to develop Values and Dispositions will be through both direct and indirect methods. The direct method would include morning assembly, classroom activities, discussions, and readings; and the indirect methods would include the contents of different subjects, e.g., Languages, Science, Social sciences, Art education.
2. Learning of Values and Dispositions will be embedded in the selection of content, pedagogical approaches, and assessment tools.
3. Pedagogical approaches to develop Values and Dispositions will include regular dialogue and discussion with active listening, observation, and practice in real life.
4. Assessment of values must not be for judging the student but must be a developmental exercise. The focus of assessment must be on the 'behaviour' that demonstrates the value or the dispositions. Different tools for assessment of values will include observation, rubrics, reflective diary, group discussions, presentations, participation in community work or school events, creative short essays or projects. Self and peer assessment methods would be excellent practice which provide training in objectivity and impartiality.
5. Teacher and the school management should be assessed by the students through constructive students' feedback and suggestions.

Section 2.3

Learning about and Caring for the Environment

Environmentally sustainable practices are enrooted in India's long history and rich traditions. Understanding and learning about such practices from various parts of the country is important for our children. In the light of growing environmental concerns, it is the need of the hour that our school going children should not only be aware but also future ready to provide innovative solutions for addressing these concerns.

Environmental sensitivity refers to an individual's emotional connection, awareness, and ethical responsibility toward nature. It involves attitudes, values, and behaviours that encourage sustainable practices and ecological preservation. Environmental sensitivity is the foundation for fostering an ethical and responsible approach to nature, ensuring sustainable practices and long-term ecological balance. Students who are environmentally sensitive are also more likely to embrace eco-friendly practices including conserving natural resources, encouraging clean energy and avoiding single use plastics. Schools may enable students to take proactive steps to solve environmental challenges and influence their families and communities by cultivating a culture of sustainability.

Environmental sensitivity aligns with international goals such as the UN Sustainable Development Goals (SDGs), particularly SDG 4 (Quality Education) and SDG 13 (Climate Action). It reinforces the need for a global transition towards sustainability, as highlighted in climate summits and environmental conventions. India has a rich tradition of environmental sustainability, deeply ingrained in its cultural and spiritual heritage. Some of the initiatives at the national level are National Green Corps (NGC) by the Ministry of Environment, Forest and Climate Change (2001), Green Schools Program (GSP) by the Centre for Science and Environment (CSE). Practical initiatives such as water conservation projects, afforestation drives, and waste management programs nurture environmental responsibility. National initiatives like Namami Gange, Swachh Bharat Abhiyan, and Green India Mission provide real-world contexts for environmental education. The landmark judgement of the Supreme Court of India (2002) made it mandatory for the states and union territories to comply with the implementation of environmental aspects through education with the strategies of infusion, and integration for making it a separate subject area.

The National Education Policy (NEP) 2020 advocated that environmental sensitivity is not limited to theoretical knowledge but extends to developing an emotional connection with nature. It involves fostering awareness, values, attitudes, and practical skills that encourage environmentally responsible behavior. In the face of climate change, deforestation, and resource depletion, environmental sensitivity becomes an essential component of education.

National Curriculum Framework for School Education (NCF-SE) 2023 emphasizes the urgent need to nurture environmental consciousness from an early stage. Developing sensitivity

towards the environment enables individuals to make informed decisions, participate in conservation efforts, and advocate for sustainable living. NCF-SE 2023 identifies environmental sensitivity as a cross-cutting theme, integrated into multiple disciplines. It emphasizes experiential learning through field visits, projects, and nature-based activities. It envisages the curriculum that promotes a local-to-global approach, helping students understand their immediate environment while connecting with global issues.

For school children in Odisha, a state rich in biodiversity (Table 1), however is equally susceptible to environmental problems like cyclones, deforestation, and climate change, environmental education and awareness is essential. Incorporating regional environmental concerns into the curriculum encourages students to take significant action in their communities relating to real world problems. In the long-term, encouraging a deep-seated reverence for the natural world among Odisha's children would help the state withstand the effects of climate change, guarantee resource sustainability and for creating a healthier, greener future for future generations.

2.3.1 Aims of Environmental Education

i. Create a strong environmental literacy among the school students in order to understand the environment holistically through integration of knowledge across different subject areas.

ii. Inculcate love and care for the environment through the understanding of our ancient Indian traditions and practices.

iii. Develop an action-oriented mindset and skill-set and become future ready to deal with the environmental challenges not only at the local level, but also at the national and global level.

2.3.2 Environment Education in the Context of Odisha

There are many environmental challenges faced by the people of Odisha. The state is particularly vulnerable to cyclones, floods, and climate change which makes environmental sensitivity an educational priority. Odisha's rich biodiversity is under threat, for example, mangrove forests are depleting due to expansion of prawn farming, population of olive ridley turtles and saltwater crocodile are declining due to climate change. Its rich biodiversity, including Similipal National Park and Chilika Lake, requires proactive conservation efforts. Therefore, students should learn about ecological balance, disaster preparedness and sustainable living practices because Odisha is a state that frequently faces natural catastrophes due to its location along India's east coast. By implementing eco-friendly practices, planning tree-plantation drives, promoting waste management strategies and fostering students' involvement in conservation initiatives, schools may significantly contribute to the development of environmentally conscious individuals. Odisha's tribal communities possess valuable ecological wisdom that should also be integrated into education for sustainability.

Odisha's unique environmental challenges demand a tailored approach to foster environmental sensitivity. Some of the key focus areas are: disaster preparedness (educating students about

natural disasters), risk reduction and resilience, sustainable livelihood practices such as encouraging eco-friendly agriculture, fisheries and forestry, conservation of local ecosystems, raising awareness about Odisha's biodiversity and conservation efforts, indigenous environmental knowledge, integrating traditional ecological wisdom into education through promotion of eco-friendly habits, encouraging waste reduction, water conservation and renewable energy use.

Table 1: Rich Biodiversity of Odisha State

i. About 37% of the State's geographical area is covered with forest. ii. Odisha has 5 of the 16 major types of forests present in India: Northern tropical semi-evergreen forest, Tropical moist deciduous forest or Monsoon Forest, Tropical dry deciduous forest, and Tidal mangrove forest. iii. State has notified four Biodiversity Heritage Sites: Mandasaru Hills in Kandhamal, Mahendragiri Hills in Gajapati, Gandhamardan Hills in Bolangir and Bargarh and Gupteswar Forests of Koraput.
Rich Floral diversity: Key highlights i. Important aromatic plants of the state: Kiya (*Pandanus fascicularis*), Sal (*Shorea robusta*), Vetiver (*Vetiveria zizanioides*), Wild lemongrass ii. Odisha is the second-largest Non-Timber Forest Producing state in India. iii. It has 5174 species of plants and fungi, 24 plant species are endemic to Odisha, iv. 41 medicinal plant species are threatened
Rich Faunal diversity: Key highlights i. Horseshoe crab in the Odisha coastline is a living fossil existed even before dinosaurs. ii. Endangered Irrawaddy dolphins, iii. Migratory birds of Bhitarkanika, Chilika (Nalabana), and Manglajodi iv. Saltwater crocodile (Crocodylusporosus) of Bhitarkanika v. Muggers of Similipal and Gharials of Tikarpara have international repute vi. 65 animal species are threatened
Rich Agricultural biodiversity i. 15,000 traditional rice varieties out of 50,000 found in the world ii. Koraput district, (known for conserving 130 indigenous varieties of rice by Shrimati Kamla Pujari and 30 different millet by "Millet Queen" Shrimati Raimati Ghiuria) declared as a Globally Important Agricultural Heritage System by Food and Agricultural Organization (FAO) in 2012.

Source: Odisha State Biodiversity Board

2.3.3 Learning about and Caring for the Environment across School Stages

In the *Foundation Stage*, socio-emotional and ethical development domain focuses on

developing a positive regard for the environment around children. Thus, from the very beginning students are sensitized to caring of all life forms, and finding joy in engaging with nature. The role of trees, water, air and the sun in our lives will help creating a positive bond between children and various elements of nature. It includes illustrations for stories about flora and fauna, rhymes on the environment, and folklore, local arts and festivals that express gratitude and reverence for elements of nature. It focuses on joy-based learning and is based on pedagogies of activities, toys and storytelling.

At the *preparatory stage,* observing, understanding, and engaging with nature through thematic integration of environmental concerns in different subjects will be the focus. Content in this stage should ensure maximum interaction with the environment, reflecting diversity in geographical features, flora, and fauna. Folklore, folk songs, oral histories, and short case studies connected to the environment can be used to develop among students a love for the environment. Students are introduced to biodiversity, the importance of clean water, air and soil, and the consequences of pollution. They are also encouraged to participate in school-level activities for environmental conservation to create healthy habits, and undertake field visits to understand the difference between clean and polluted environments, etc.

At the *Middle Stage,* the focus would be on understanding the environment through experiential learning and critical thinking such as exploring the living world around us, and its interaction with the inanimate world; and understanding the spatial distribution of natural resources, their conservation and the interdependence between natural phenomena and human life etc. Students will deepen their knowledge of ecosystems and the interconnectedness and interdependence of elements in nature, and will understand humans as integral part of ecosystems. Students will be exposed to real-life case studies of environmental disasters and understand the impact of human activities on the environment.

At the *Secondary Stage,* students will deepen their subject knowledge and understanding of the critical links between different factors and issues within their social, physical and biological environments. Environmental education will be a separate Curricular Area at this Stage, offered in Grade 10. Students will focus on developing a holistic understanding of key concerns and issues related to the environment, drawing upon their understanding across other curricular areas. It emphasizes environmental restoration, sustainable practices, and ethical responsibility.

Across school stages, students' continuous engagement with and care for their environment will be emphasized. From a direct engagement with nature in earlier stages, students will move towards deepening their environmental knowledge, assessing issues, showing initiative, creativity, perseverance, and problem-solving skills for environmental action.

2.3.4 Incorporating Environmental Sensitivity across Stages and Subjects

Incorporating the cross-cutting theme of environmental sensitivity across all stages and school subjects is essential to developing responsible and aware citizens, as emphasized in the National Education Policy (NEP) 2020.

At the Foundational Stage, environmental awareness can be introduced through nature walks,

storytelling and hands on activities. For example, in Mathematics, simple counting exercises can use pebbles, leaves or seeds to connect children with nature. In EVS, activity on observing plants growth can be included. *Balvatikas* in the schools can have a small nursery where few plants can be grown. These plants can be termed as green pets to make children emotionally attached to plants. Languages can feature poems and stories about the nature. Art and Music can be included to encourage children to express their appreciation for the environment through drawings, poems and songs.

At the Preparatory Stage, learning can deepen with project-based activities. In Mathematics problems related to forest cover, rainwater collection or energy conservation can be included. In EVS lessons, concepts like pollution, biodiversity, and the water cycle with practical demonstrations can be introduced. Indigenous environmental practices and sustainable living can also be highlighted. Languages can include essays, speeches and discussions on environmental issues.

In the Middle Stage, the focus can be on analytical thinking and problem-solving related to environmental concerns. For example, Mathematics can include data analysis and problems on deforestation, climate trends or carbon footprints; General Science can cover renewable energy, conservation, and sustainable agriculture; Social Science can delve into policies, global warming and sustainable development goals; and Languages can encourage debates and creative writing on environmental issues.

At the Secondary Stage, students will be engaged in research and real-world applications. For example, Mathematics can involve statistical analysis of environmental related data; Science can focus on advanced topics such as climate change, waste management, and green technology; Social Science can include case studies on environmental policies, global trends and treaties; Languages can incorporate literature that explores nature and human interaction and its impact; Commerce and Economics can examine sustainable business models and green finance; and Arts and Humanities can include environmental activism and eco-criticism in literature. By embedding environmental sensitivity across subjects, students develop a holistic understanding of sustainability and are encouraged to take action toward a greener future.

2.3.5 Role of Home and Community: Extending Learning beyond the Classroom

Encourage sustainable practices at home and community for banning single use plastics, observing environmental days and *Swacchhta Pakhwada* by engaging in clean-up drives at beaches, afforestation in degraded areas, and water conservation projects; community participation in environmental projects and policies. Local engagement through environmental awareness campaigns, develops skills for community-driven environmental conservation, encourage student participation in cyclone resilience programs, mangrove restoration initiatives, and sustainable tourism awareness campaigns (e.g., eco-tourism in Chilika and Satkosia). Plants may be adopted and nurtured by the children in the community.

2.3.6 Capacity Building of Teachers

Capacity building and empowerment of teachers through specialized training programs on environmental education, professional development workshops, collaboration with environmentalists and conservationists may be facilitated. Teachers should be sensitized to embrace the eco-friendly practices beyond the classroom in order to have lifelong impact on students.

2.3.7 Guidelines for Learning & Teaching Materials (LTM) and Textbook Development

Eco-friendly habits and sustainable lifestyle should be promoted through the textbook contents. Government initiatives such as mission LiFE (Life style For Environment) which emphasize on individual contribution for sustainability and eco-friendly lifestyle for saving the environment may be included. State specific environmental issues and success stories besides incorporation of local languages, indigenous and traditional knowledge should be incorporated. Sustainable practices such as Desi Bihana Surakshya Mancha for preservation of traditional seed varieties, water harvesting practices such CHHATA programme for community rainwater harvesting.

Students should be introduced to sanitation and hygiene practices including waste recycling, source segregation of municipal wastes, waste to wealth, circular economy highlighting programmes such as sale of compost – *Mo Khata* – made at micro compost centres, and *Swachha Sathis*. State natural resource (land, water, air, minerals, forests, fisheries, and wildlife) management program such as Odisha Watershed Development Mission, soil conservation and agroforestry should also be incorporated. Measures taken for reducing air and water pollution such as clean air programme, city action plan for industrial town such as Talcher, integrated water programme, water and air quality monitoring may be mentioned. Wetland protection and restoration programmes such as in Chilka and Bhitarkanika including mangrove conservation programmes such as mangrove nurseries, benefits of mangroves may be introduced. Besides these, inclusion of disaster preparedness for extreme weather events - cyclones, heat waves - heat action plan, early warning system and community-based disaster preparedness may be done.

Interdisciplinary and Traditional Knowledge Integration is recommended as per NEP 2020. Examples from the state may be mentioned such as protection of sacred groves of Odisha, art and cultural expression such as *Jhoti Chita* and *Pattachitra* and linkage with nature may be included, practices for sustainable agriculture e.g., cultivation of native millets, community seedbanks, traditional agricultural system of Koraput, traditional mixed farming with livestock, conservation of local varieties, introduction of traditional water conservation measures such as Kata/Mundas/Bandhas and traditional irrigation systems such as Nadi system and Bawdis and community ponds may be included. The traditional way to protect forest by Dongria Kondh tribals, protection of deer by Koda Bhal villagers may be mentioned. Traditional healing systems such as in some villages of Bhoisahi – Vaidya Gaon, where every house has a traditional healer may be mentioned.

Local flavour to the content through showing and telling of natural resources found locally, field visits to nearby sites of topical importance and guest lectures by regional experts on local flora and fauna. Utilization of local case studies, like the Chilika Lake conservation efforts. Literature of the eminent poets, novelists, environmental thinkers, and activists, such as Mahatma Gandhi, Rabindranath Tagore, Premchand, Ghanashyam Raturi, and R K Narayan, Jayanta Mahapatra, Fakir Mohan Senapati, Radhanath Ray and Gopinath Mohanty that reflects the deep connection between nature, culture and society for environmental sensitivity can be incorporated.

Key Takeaways

1. Environmental concerns among students can be achieved by reinforcing environmental consciousness through school subjects and daily school activities. This will be integrated into the curriculum through hands-on activities, community engagement, and interdisciplinary learning.
2. From a direct engagement with nature in earlier stages, students will move towards deepening their environmental knowledge, assessing issues, showing initiative, creativity, perseverance, and problem-solving skills for environmental action.
3. Capacity building of teachers will include contents like, utilization of indigenous wisdom in fostering a harmonious coexistence between humanity and nature.

Section 2.4

Inclusion in Schools

National Education Policy (NEP 2020) aims to create an education system where all of India's children get equal opportunity to learn and excel, regardless of circumstances of birth or background. As stated in the policy, a good educational institution is one where every student feels welcomed and cared for, a safe and stimulating learning environment exists, a wide range of learning experiences are offered, and good physical infrastructure and appropriate resources conducive to learning are available to all students. Inclusive and equitable education is critical to achieving an inclusive and equitable society in which every citizen has the opportunity to dream, learn, thrive, and contribute. This SCF is designed to ensure that every student, including those with disability/ impairment of any kind, gets opportunity and access to learn and experience a sense of belonging. To ensure this, schools and the overall education system must take many actions, including adaptation of curriculum for children with disabilities/impairment and for those with Special Talents.

2.4.1 Curriculum Adaptation for Children with Disabilities

First and foremost, it is important to recognize that disability is heterogeneous. Every child is unique, and each child possesses different abilities and ways of learning. Accordingly, learning goals must also vary from child to child. Since the number of children with intellectual disabilities in a typical classroom is relatively small, teachers can make thoughtful modifications to their instructional methods. By exercising a little extra effort, patience, and providing additional time for practice and reinforcement, teachers can help these children achieve their learning goals. Above all, maintaining a positive belief in the child's ability to learn can make the most significant difference in their educational journey.

2.4.2 Intellectual Disability (Autism, Down Syndrome, Cerebral Palsy, ID)

In the case of a child with an Intellectual Disability (ID), the learning objectives should be tailored based on the child's individual level of functioning. Setting learning goals for such children should happen across three distinct areas: life goals, long-term goals, and short-term goals. Therefore, for children with ID, learning must be aligned closely with their Individualized Education Plan (IEP). Having an IEP is essential to guide their educational journey meaningfully and systematically.

For children categorized as having mild or moderate intellectual disability, the teaching process can be adapted using specific strategies while setting learning goals and choosing the approach. Some key approaches for adaptation could include: breaking down tasks into smaller, manageable steps; using simple, clear language and repetition; providing visual support and hands-on learning opportunities; reinforcing concepts through practice in different contexts;

building on the child's strengths and interests to motivate learning. Through careful planning and individualized support, children with intellectual disabilities can achieve meaningful and functional learning outcomes.

2.4.2.1 Language Education

For children with intellectual disabilities (ID), learning language can be challenging due to limitations in cognitive functioning, memory, attention, and processing speed. However, with the right teaching approaches, these children can develop meaningful communication skills that significantly enhance their quality of life. Educators, therapists, and families play a crucial role to support language development tailored to each child's needs. Teaching language to intellectually disabled children require structured, individualized, and often multi-sensory approaches that build on their strengths and accommodate their specific challenges.

The Curriculum Approach: The curriculum approach may include a set of *Visual and Action-Based Methods* in which educators use pictures, flashcards, visual dictionaries, role-play, dramatization, and action-based storytelling to support comprehension. In *Adapted Communication Methods,* educators utilize simplified language, gestures, and assistive technologies (video/ multimedia graphics). The focus of curriculum should be to prioritize functional communication (naming objects, expressing needs, answering simple questions) over abstract academic language.

Teaching Strategies: The teaching strategies that can help intellectually disabled children better understand language-related tasks and reduce anxiety in learning environments include: Breaking stories into smaller parts and encouraging repetition; use of multisensory activities involving drama, concrete objects, and paired reading; labelling pictures clearly and using graphic organizers to support understanding; and creating frequent opportunities for verbal and non-verbal interaction.

Learning Outcomes: Learning outcomes for teaching language to intellectually disabled children are designed to be specific, measurable, and developmentally appropriate, e.g., building vocabulary and functional communication skills; developing basic reading skills (picture-word matching, oral reading); and encouraging writing basic words or short sentences using assistive aids as necessary.

Teaching language to intellectually disabled children require a flexible, individualized, and supportive approach. Combining simple methods such as starting with real, meaningful content, encouraging both verbal and non-verbal expressions, and using larger fonts, thick pencils, and tracing activities for writing would help a lot in language learning of these children. The ultimate goal is not just to teach words, but to empower these children to communicate effectively, participate in social life, and gain greater independence. With patience, consistency, and collaboration among educators, therapists, and families, meaningful progress in language development is not only possible but achievable.

2.4.2.2 Mathematics Education

Children with intellectual disabilities often face unique challenges when learning math due to limitations in memory, attention, abstract reasoning, and problem-solving abilities. Therefore,

teaching mathematics to intellectually disabled children, requires a thoughtful, structured, and individualized approach that focuses on practical application, multi-sensory engagement, and continual reinforcement.

Curriculum Approach: A curriculum approach to teaching mathematics to intellectually disabled children should focus on practical, functional skills while accommodating their cognitive, behavioral, and learning needs. These may include: *Concrete, Hands-On Learning* such as using real-life materials like abacus, real money, clay models, shape blocks, and number lines; *Real-World Contexts* such as role-play shopping, handling coins, measuring objects, and time-telling games; and *Sequential Learning* such as moving from simple to complex concepts gradually with frequent and concrete practice. Here the goal is not only to teach mathematical concepts but to ensure that children can apply them meaningfully in daily life.

Teaching Strategies: Intellectually disabled children often face difficulties in abstract thinking, memory retention, and problem-solving, which can make learning math challenging. Therefore, educators must adopt strategies that are tailored to the child's developmental level and learning style. The goal should not be just academic understanding, but the ability to apply math in real-life situations. The strategies like teaching through physical activities (e.g., jumping steps while counting), using structured tasks and clear, direct instructions, and reinforcing learning through repeated exposure and practice, would be effective

Learning Outcomes: Learning outcomes for teaching mathematics to intellectually disabled children include: (i) *Understanding Basic Concepts* such as number sense (counting 1–20 and beyond), simple operations (addition and subtraction with real objects), recognizing basic shapes (circle, triangle, square), basic money handling (recognizing coins, simple buying activities), and understanding basic time concepts (day, night, today, tomorrow); and (ii) *Skill Development* in mathematical applications like time, money management, measurement, and basic calculations through interactive play and life skills activities.

Key Pointers: Teaching mathematics to intellectually disabled children, requires patience, creativity, and a focus on functional, meaningful learning. By using real objects and hands-on tools; conducting activities lively, simple, and connected to everyday life situations; and building confidence through frequent positive reinforcement educators can help these students gain essential math skills that support everyday living and lifelong learning.

2.4.3 Children with Visual Impairment

Children with Visual Impairment (VI) follow the same curriculum as other children in mainstream schools. Subjects and topics are not changed. Only the way of teaching and learning is made different to help them. Since they cannot see clearly, they learn by touching objects and listening to the teacher's explanations, seeing is replaced by touching and hearing.

For learning mathematics, students with VI learn to read and write using Braille, a special writing system, they can feel with their fingers. They write using syllables. For learning maths, they use special tools like the Arithmetic Board and Mental reasoning. These help them count, add, subtract, and solve problems without needing to see. For geometry they struggle so

drawing to be avoided or replaced with calculations only. Usually they are taught using low-cost, strong, and easy-to-use materials like embossed diagrams, clay models, and tactile charts.

Since vision and colour are weak areas, their touch, hearing, and smell are used more in learning. They touch objects, listen carefully, and use smell when needed to understand the world around them. The teachers must be aware that children with VI face problems in tasks like drawing, reading graphs, or color-related activities, which depend on vision.

However, for better learning of children with VI, some alternative approaches can be followed. For example, they are given other types of questions like speaking answers instead of drawing, asking for answer through touch-based models, giving clear spoken instructions, and use of real objects and hands-on activities to teach instead of depending on pictures.

2.4.4 Children with Hearing Impairment

Children with hearing loss face unique challenges in communication, language development, and social interaction, which can affect their academic performance and emotional well-being. Course curriculum and learning outcomes are same as other children in mainstream schools. However, with appropriate support, teaching strategies, and inclusive environments, they can learn effectively and reach their full potential. For children with hearing impairment, fundamental learning focuses on: Acquiring Sign Language skills for effective communication; developing daily living skills such as self-care, hygiene, and social interaction; and gaining basic knowledge through real-life activities supported by visual cues.

Language Education There are several approaches to language education for children with hearing impairment, e.g., the oral/aural approach, which focuses on developing spoken language through the use of hearing aids, manual communication using sign language as a first language, total communication, which integrates speech, sign language, gestures, and visual aids to ensure the child has access to language in multiple forms. Visual support plays a vital role in language learning for these children. Teachers often use pictures, written words, facial expressions, and body language, props, flashcards, and visual stories to reinforce understanding. Word drills and the practice of building simple sentences, addressing grammar difficulties by prioritizing effective communication over grammatical accuracy, and use of assistive technologies, such as captioned videos and speech-to-text tools, also help bridge the communication gap in classroom settings.

Mathematics Education: Mathematics can be effectively taught to children with hearing impairment when appropriate strategies and supports are in place. While hearing-impaired children may not struggle with mathematical reasoning itself, they often face difficulties in understanding instructions, word problems, and classroom discussions due to language and communication barriers. Therefore, mathematics education for these learners must focus on using video clues to demonstrate counting, number patterns, and problem-solving visually; applying mathematical kits like the abacus, counting slate, and number charts for hands-on learning; and teaching mathematical concepts through real objects, making abstract ideas more tangible.

Teaching Methodology: Instruction must follow a "part to whole" approach. For example, students first learn small, simple parts of a topic, which are later combined to form the complete concept; lessons are delivered slowly, step-by-step, with repetition and visual demonstrations for better retention; graphical illustrations are used for teaching concepts such as pre-post, past-present-future, and cause-effect relationships; and interactive panel boards and smart boards are used to make lessons more engaging, interactive, and accessible.

Instruction and Assessment Adaptations: Because students often face challenges in grammar, interpreting the meaning of questions is a key part of teaching. Teachers must carefully explain questions to ensure clarity and understanding before expecting answers. Reasonable accommodations include: providing summary versions of chapters and subjects instead of lengthy texts; and using summary sheets, mind maps, and flowcharts to organize information visually. For evaluations, objective-type questions (such as multiple-choice, true/false, and matching) are preferred over subjective formats like essay writing. This allows students to demonstrate their knowledge without struggling with complex grammar.

Supporting Tools and Strategies: Some essential supports for children with hearing impairment can be provided for their effective learning. These, *inter alia,* include use of assistive listening devices; visually rich assignments (with pictures, diagrams, and short written responses); video-based quizzes and visual assessments, colourful, clear, and visually stimulating learning materials; frequent repetition of key points; activities such as group work, paired reading, and visual storytelling; vocabulary sheets combining pictures with words; visual timetables, daily routine charts, and behaviour charts; and sign language interpreters or peer support systems whenever possible

2.4.5 Curriculum Adaptation for Children with Special Talents

Inclusion in schools also implies accounting for the educational needs of students with special talents. There are innate talents in every student, which must be discovered, nurtured, fostered, and developed. Special talents can independently exist in intellectual, creative, social, musical, and psychomotor domains. Care must be taken to identify special talents in students in all areas of the curriculum and to plan for enriching their learning in depth and breadth. This will ensure these students do not get frustrated and lost in the class, and that their enthusiasm and motivation to learn are maintained. Students who show strong interests and capacities in a given area must be encouraged to pursue that area beyond the general school curriculum. As stated in NEP 2020, Teacher education will include methods for the recognition and fostering of such student talents and interests. The NCERT and NCTE will develop guidelines for the education of gifted children. B.Ed. programmes may also

Bipin Bihari Choudhry

Bipin Bihari Choudhary (1905-1982), who had hearing and speech impairment, was the first physically challenged student at the Associated Royal College of Art, London. He is still the only Odia member of the college. Grandson of the legendary Odia author Fakir Mohan Senapati, Choudhary with sheer dint of determination and commitment, proved himself as an excellent academic painter. After completing his studies, Choudhary returned to the state and wrote dictionaries for the easy usage of Odia, English and even Bengali. He fought for the establishment of schools for the speech and hearing impairment and an art college in the state. He had been a close friend of Helen Keller, C.F. Andrews and many other well-known personalities.

allow a specialisation in the education of gifted children ([NEP 2020, 4.43).

2.4.5.1 Key Considerations for the Inclusion of Children with Special Talents

Special attention and special support: Contrary to popular belief, students with special talents may need special attention and support which may include using richer reading material, as well as assigning more challenging exercises.

Inclusion of students from across the socio-economic spectrum: In this realm, all students in schools, including those who come from economically-advantaged backgrounds as well as from economically-disadvantaged backgrounds, need to get equal opportunities.

Differences in behavioural traits: Teachers and parents/families need to understand certain common social/emotional traits such as heightened sensitivity, emotional intensity and reactivity, perfectionism, among these children and deal with these appropriately.

Rethinking pedagogy: Teaching strategies require review and redesign based on the degree and kind of special talents students display.

Supportive and democratic school culture: Peers and other adults in the school must also be oriented to support these students which requires the development of a school culture that values special talents.

Key Takeaways

1. School environment should be inclusive in nature allowing every student, including those with disability/ impairment of any kind, should get opportunity and access to learn and experience a sense of belongingness. The pedagogical practices, assistive devices, learning resources and assessment mechanisms and Individualized Education Plans (IEPs) should be aligned with the learning needs of children with special needs (CwSN).
2. The innate talents in students in all areas of the curriculum must be discovered, nurtured, fostered, and developed. Teacher education system will explore the tools and techniques for the recognition and fostering of such talents and interests.
3. All students in schools, irrespective of their socio-economic backgrounds, should get equal opportunities in the promotion of special talents. However, learning-teaching strategies will be based on the degree and kind of special talents students display.

Section 2.5

Promoting Personal and Academic Growth: Role of Guidance and Counselling

The NEP 2020 states that taking care of students is central to quality education, which includes content, pedagogy, co-curricular activities and all other school processes involved in teaching and learning. Care is central to teacher-student interaction, which forms the foundation for developing an accepting and nurturing learning culture in schools, and determines, in a large part, the way teachers organize learning experiences for children. Individual students may have specific needs requiring greater attention, which the school may meet by developing a system of guidance and counselling. Because of their close contact with students, the school teachers and school heads are best placed to guide and counsel students and their parents. Integrating guidance and counselling services into school curricula will create a nurturing learning environment in the school, where students would feel empowered to take charge of their learning, mental and emotional well-being and important life choices.

The NCF points out that the Indian vision of education is centred on the idea that "*learning about the external world should be in consonance with learning about inner reality and self.*" The Indian pioneers and thinkers including Tagore, Vivekananda, Gandhi and Sri Aurobindo have all along emphasized harmony, balance and the total development of child's personality, cognitive capacities and mental health. The focus is not just on acquiring academic competence but also on the development of self and a harmonious balance between intellectual competence and human qualities. Guidance and counselling can empower children to deal with their personal issues that may stand in the way of actualizing their optimum potential to ensure that they remain mentally healthy while pursuing their academic and career path.

The primary focus of guidance is to help students make informed decisions about their education, career choices and personal development, while counselling is intended to help them address personal, emotional and behavioural issues that might be affecting their academic performance and well-being.

2.5.1 Goals of Student Guidance and Counselling

Guidance and counselling will not only be offered as supportive and preventive programs, but will also be integrated into the school curriculum through well-planned lessons and cross-curricular approaches. Teachers are uniquely positioned to take up counselling role for providing support to students' academic, emotional and social development.

Guidance and counselling services will be offered at different levels: (a) *one-to-one individual counselling* support will be provided to students to empower them to deal with their personal, mental, emotional, social and academic difficulties; (b) *small group-level counselling* will address common concerns of students such as anxiety, academic pressure, inter-personal issues, risky behaviours etc.; (c) *class room sessions* will be offered to educate students on various life

skills including self-awareness, social values, decision making, conflict-resolution, stress management etc.; (d) *crisis intervention*, as required, will provide immediate support to students experiencing acute crisis such as grief, trauma, or family issues; and (e) *peer mentoring* will be encouraged to support other students under the guidance of a trained teacher.

Considering the ground realities of majority of schools across the state, offering holistic guidance and counselling services at the school level has its limitations. While the teachers and school heads can manage to address certain kinds of challenges, some more intriguing cases should be directed to counselling professionals outside the ambit of the school. The schools are expected to offer guidance and counselling to address challenges children face in some of the following domains of holistic development and ensure that teachers/counsellors provide assistance to students in these domains.

Domain	Areas in which teacher/counsellor can offer guidance and counselling
Health and Well-being	• nurturing physical and mental health as inalienable aspects of for overall wellbeing • teaching the importance of self-care, healthy nutrition, and maintaining a heathy lifestyle • creating awareness among students regarding the dangers of substance abuse, risky behaviours and mental health issues
Cognitive and Language and Academic Skills	• setting and achieving academic goals through effective learning and study habits • developing time-management skills to overcome procrastination • inculcating the importance of hard work, perseverance and self-discipline • providing learning environment for thinking freely, solving problems and engaging in creative work
Personal Development	• developing awareness regarding the importance of self-concept, self-worth and personal identity • managing emotional issues such as anxiety, depression, self-doubt • promoting mindfulness and emotional regulation strategies to cope with stress, anxiety and setbacks • building self-esteem, confidence and positive mental health to deal with stressful experiences inside and outside the school
Socio-emotional-ethical Competence	• building healthy inter-personal, social and peer relationships • developing skills for effective communication • working in a team with cooperation and collaboration • managing conflicts and dealing effectively with disputes and stresses • developing trust, empathy, social responsibility and citizenship behaviour • understanding the impact of truancy and bullying and learning how to address these concerns

Career and Future Planning	• exploring one's own strengths, interests and values in relation to potential careers • understanding different educational and career paths, and providing guidance on required skill sets • providing tools and resources to help them make informed decisions about future studies and career pathways. • developing job readiness skills such as desirable skill sets, teamwork, leadership and adaptability

2.5.2 Becoming an Effective Counsellor

Counselling is both an art and science. The teachers need to appreciate that counselling is an inter-personal dialogue between the counsellor and the student to help the latter self-determine his/her goal and self-select the method to reach the goal. The counsellor serves as a catalyst in the counselling process to facilitate transition to a more meaningful life process. Teachers need to know that counselling is an empowerment exercise (*it is not simple conversation or teaching or directing or advice giving or moralizing, or persuasion, or praying for changes to occur without effort*). In counselling, the student is empowered to take responsibility for his/her behaviour and effect changes for improved self-awareness, self-regulation and performance. While the counsellor uses specialized macro- and micro-counselling skills, the counsellor is more important than the methods of counselling.

To act as an effective counsellor, the teacher needs to inculcate certain personal qualities. The teacher should have a sense of *self-awareness* and must display *good psychological health*. He/she should be *alert and sensitive* to students' feelings and preferences and must be *genuinely interested* in helping students with an *open mindset* without having any personal bias. Establishing adequate rapport with students to generate a *trusting relationship* and maintaining *confidentiality* are very important for students to open up before the teacher. Teachers can best help the students if they display *unconditional positive regard* to students, i.e., they do not negatively evaluate students on the basis of their past or judge them against an ideal standard. Rather they should be *empathetic* to students and see their private world through their eyes. The teachers must develop these qualities through self-reflection and self-analysis and/or seek training to act as an effective counsellor. These are not just personal qualities; the processes underlying these qualities should also be used during the counselling process.

2.5.3 Integrating Guidance and Counselling into School Curriculum

Incorporating guidance and counselling into school curriculum ensures that students not only receive academic knowledge but also develop the essential emotional, social, and life skills necessary for personal growth and success. This section outlines the integration of guidance and counselling into the curriculum, aiming to provide students with the tools they need to navigate challenges, build resilience, and make informed decisions that positively impact their academic achievements and personal well-being.

2.5.3.1 Developing a Comprehensive Curriculum

Schools should incorporate guidance and counselling into the curriculum in a systematic and structured way.

Including key topics: The key areas of focus such as mental health awareness, study habits, academic goal-setting, anxiety-management, conflict-resolution, coping mechanisms, emotional intelligence, socio-emotional skills etc. can be included in the curriculum along with interesting curricular and co-curricular activities to foster these skills. Besides special sessions devoted to teaching these key areas, those should also be connected to the teaching of core subject areas. Instead of being taught in isolation; they should be the underlying themes of all subjects and pedagogic practices.

Setting grade-level expectations: The contents and the delivery methods should be developmentally appropriate for each grade level. The foundational learning can be introduced early and more advanced themes would be covered as the student progresses. Guidance and counselling will be adapted to suit developmental stages and age of the students.

Stage	Focus area
Foundational and preparatory (Preschool to Class 5: ages 3-11)	* self-care, safety, healthy nutrition and hygiene habits * peer relationships, friendship skills, awareness of feelings and emotions and basic problem-solving techniques * introduction to simple decision making and conflict handling
Middle school (Classes 6-8: ages 11-14)	* understanding self-identity and social dynamics, importance of team work, effective communication, strategies to cope with academic and peer pressure * understanding personal interests and career preferences, setting academic goals, self-assessment of performance
Secondary (Classes 9-12: ages 14-18)	* in-depth exploration of mental health issues, self-esteem, confidence, life skills and career planning * preparation for transition into adulthood, time management, study skills, personal responsibility, personal and social identity * emotional regulation pertaining to anxiety, depression and self-doubt * importance of hard work, persistence and self-discipline * dangers of risky behaviours and substance abuse * career counselling, college preparation and job readiness training

Specifying learning outcomes: It is important to clearly define what the student should know and be able to do at the end of a reasonable interval (preferably after an interval of three to six months) of schooling. This could include the ability to manage emotions, coping with stress, addressing mental health issues. working effectively in teams, setting personal and academic goals or identifying personal/career interests etc.

Fixing assessment criteria: Teachers should determine what criteria they would adopt for assessing students' progress. This may include teacher feedback, parental feedback, student's

academic performance, student reflections or self-assessment of student's socio-emotional growth. The criteria should be guided by SMART (specific, measurable, achievable, relevant, time-bound) principle.

2.5.3.2 Integration into Academic Subjects

Guidance and counselling do not have to be necessarily isolated from the academic subjects. Some examples are given below regarding how teachers can integrate those into core subject areas.

Physical Education: Physical education contents can be meaningfully used to foster teamwork, peer relationships, personal identity, self-esteem, resilience, and emotional regulation. Physical activities can serve as a medium for stress management and maintaining a healthy life style.

Language and Arts: Reading books and stories, and watching visual contents with focus on analysing how the stories revolve around emotions and empathy, and how the characters address themes like empathy, self-expression, friendship, conflict and personal growth etc. Students may be asked to complete incomplete stories, write reflective essays, create art forms or narrate their personal experiences orally or in written form.

Mathematics: Students can be taught to connect mathematical concepts into their real-life experiences. They can apply critical thinking and decision making in problem solving scenarios related to financial planning, budgeting and managing anxiety toward math problems. Students can be encouraged to set personal goals related to academic growth and analyse challenges they face in problem solving.

Science: Teachers can discuss topics on how human brain handles behaviour to stressful situations, and how stress and emotions affect brain, body, overall mental health and well-being. Self-care practices such as relaxation techniques, healthy eating, and sleep and study habits can be discussed.

Social Studies: Use social science topics related to environmental sensitivity, community networking, teamwork, understanding cultural differences, and resolving interpersonal and social conflicts. Lessons can emphasize empathy and social behaviour, and help students recognize their role in creating a positive school environment. Age-appropriate videos, movies and documentaries can be used to initiate discussions on mental health, overcoming adversity, teamwork, and other counselling-related themes.

2.5.3.3 Fostering Emotional Awareness and Self-regulation

Emotions handled effectively serve as motivators. Teachers can guide students in recognizing and managing their emotions constructively for their holistic development by taking up the different activities.

The teachers can begin the class with mindfulness activities such as deep breathing and guided meditation to help students regulate their emotions and focus on their studies. During the school time, use group discussion, writing, role playing or art subjects to help students express their feelings and empathy. After the school sessions are over, the students may be encouraged to reflect their activities during the day, their learning, the challenges they faced and the coping mechanisms they used. Students need to be appraised that experiencing emotions is quite

normal and what matters is how to react to emotions constructively for motivating them for personal growth. Teachers can give model demonstrations on how to handle frustration and disappoints in a calm and constructive way. As and when necessary, teachers can include short stress-relief activities such as breathing, stretching, drawing, music, craft work etc., which can be helpful to students during examination weeks.

2.5.3.4 Incorporating career guidance

Teachers can incorporate structured programs for guiding and counselling students for discovering their strengths, career exploration, goal-setting and future planning.

Discovering strengths and interests: Students can be helped to discover their strengths, interests and values by incorporating self-assessment tools into lessons. For the purpose, teachers can use interest inventories, personality tests and skill assessments to identify students' interest areas for future study or career paths.

Goal setting: Teachers can guide students to set academic, personal and career goals aligned with their skills and interests and check on their progress. Goal-setting activities can be incorporated into lessons. In order to keep students motivated, the larger goals can be broken into manageable steps and mastery at each step may be monitored and regulated.

Career exploration: Introduce career exploration activities at middle and high school level helping students to discover potential career paths. Students may be encouraged to ask questions about the types of careers that align with their skills and passion. This could also involve job shadowing (observing a day in the life of someone else in a particular role), career fairs or incorporating career planning tools into the curriculum.

Collaborating with parents: In our culture, parents exercise a pervasive influence on children's choice of career paths. Teachers should hold sessions with parents appraising them about their children's interests, skills, passion and how these are aligned with their choices for study and career. In our cultural context, obtaining parental approval for child's chosen field of study or career is very important.

2.5.3.5 Creating a Positive and Inclusive School Environment

Integrating guidance and counselling into a broader school culture is extremely important for creating a supportive environment for all students so that they feel understood, valued, supported and included in a positive learning culture.

Using positive reinforcement and mentoring: Teachers should praise and encourage students even for small accomplishments to boost their self-esteem and help them recognize their strengths and progress. Reinforcing students' positive behaviours keeps them engaged on learning tasks and helps them experience a satisfying school experience.

Promoting inclusivity: Build a school environment where all students, regardless of their background, abilities or interests, feel that they are accepted, valued and respected. This can be done by fostering team work and different forms of collaborative activities that would promote mutual respect. This is particularly important in the context of our state, where majority of learners come from rural and tribal locations and socially disadvantaged groups.

Encouraging positive peer relationships: Teachers can encourage students to collaborate and support one another so as to foster a sense of learning community in the classroom/ school. Some of these activities may include group projects, team work, peer tutoring or paired reading and question-answer activities. Peer mentoring programs can be developed where older students support younger ones. Provisions can be created to reinforce the value of helping others. When students understand the value of peer relationships, it would have the effect of preventing bullying, teasing, peer-conflicts and other negative interpersonal relationships in school campuses.

Setting expectation boundaries: Establish clear and specific criteria for expected behaviours from students and teachers. The criteria should be fair and set forth after open discussion with students so that they own the expected behaviour standards and self-regulate their behaviours.

Debates, discussions and seminars: The schools can organize regular debates, discussion sessions, seminars and workshops on topics such as mental health awareness, overcoming stress, time management, study skills, examination anxiety, resilience, conflict resolution etc. Mental health professionals, counsellors, guest speakers can be invited to lead the discussion sessions with students.

Encouraging active community involvement: Involve parents, community members and local successful persons in school guidance program. Schools may encourage partnership with families and local organizations to share with students their life experiences, real-world advice and career exploration opportunities. Teachers can suggest strategies to parents and community members to support their children's well-being at home.

2.5.4 Counselling Tips to Teachers

a. *Refrain from any negative labeling*: Never attach a fixed negative label to the student, such as "you are naughty or obstinate or a liar. Discuss the circumstances that led to a negative behavior and seek a solution by initiating a change process.

b. *Stick to the problem at hand*: Focus on the current conflict, and don't accuse students of "always" or "never" behaving a certain way. Putting students on the defensive is never wise.

c. *Get on the same side of the fence*: Rather than attempting to resolve an issue "my way" or "your way," work toward a solution that represents "our way."

d. *Try to identify the core issue*: Consider what attitudes or beliefs are motivating your behavior for clues as to what the core issue in any conflict is. Do not enter into any argument or advice-giving mode.

e. *Get in touch with your and student's feelings*: Know how you feel and think and why you think that way. Sometimes we feel that the other persons are not doing what they 'should,' but we aren't aware of exactly what we want from them, or if it's even reasonable.

f. *Sharpen your listening skills*: How effectively we listen is at least as important as how effectively we express ourselves. It's vital to understand the other person's perspective. Good listening also helps you to bridge the gap between the two of you.

g. *Don't be a mind reader*: Do not read into the mind of the students and interpret their behavior in your way. Instead, focus on students' feelings.

h. *Don't hurry to seek a solution overnight*: Counseling can take a few sessions. One has to be at it consistently.

i. *Avoid personal attributions*: It is okay to talk about circumstances and behavior. However, attacking the student's personality or character is never acceptable.

j. *Seek a solution*: Sometimes a simple and obvious answer comes up once both the teacher and the student understand each other's perspective.

2.5.5 Resource Support for Implementation

For the guidance and counselling program to be effective, the school authorities and educational planners need to develop a mechanism to train teachers, provide additional support services and arrange awareness campaigns.

Staff training: Teachers and school staff including counsellors, if any, will receive ongoing professional training to identify and support student needs. This would include training in mental health awareness, communication skills, conflict resolution, stress management, life skills and the like.

Support services: There may be crisis situations which teacher may not find comfortable to handle. Hence, a comprehensive referral system will be in place for students needing additional support including referrals to external agencies or specialists if necessary.

Awareness campaigns: Regular awareness campaigns will be conducted to inform students, teachers and parents regarding the importance of counselling, the availability of counselling services and how to access them.

2.5.6 Monitoring, Evaluating and Adjusting the Program

Any intervention implemented for a purpose needs to be monitored at regular intervals and evaluated for its impact so as to effect mid-course corrections to adjust the program to the evolving needs of the student body.

Tracking student progress: During the course of the program implementation, use academic records, attendance and behavioural data of each student to locate areas, where guidance and counselling intervention is most needed. Discuss with other teachers or counsellors regarding what best could be done for the child, who is showing slow progress in certain domains.

Feedback from students, parents and teachers: Collect feedback from the important stakeholders using surveys, informal discussions, interviews or focus group discussions to assess if the program worked in the intended direction. Feedback should be accepted with openness and sincerity of purpose for thoughtful reflection without being defensive or resentful;

then only the teachers would be able to effect changes for the better.

Adjusting the curriculum: Based on the feedback, adjust the guidance and counselling curriculum and its integration into academic subject areas to meet the emerging needs of the student body. This might involve adding new topics, revisiting the lesson plans and pedagogic processes or providing additional material or human resources.

Putting a referral system in place: There may be situation, where teachers may not feel well equipped to handle the challenges faced by a student. The best course of action for the teacher is to refer the student to an experienced counsellor for further guidance. The teachers can provide insights to the counsellor about the student's behaviours, academic and emotional struggles, and uniqueness of the student, which will help the counsellor address the challenges more meaningfully and effectively.

2.5.7 Expected Outcomes of Quality Guidance and Counselling

The NCF-SE lists out a range of expected outcomes if guidance and counselling program is effectively implemented in schools. A good quality guidance and counselling support process in schools over time will ensure that the following outcomes are achieved.

a. Students remain physically and mentally healthy and practice positive learning habits.
b. Students attend school regularly resulting in significant reduction in the number of school dropouts at all stages of schooling.
c. The school is considered as a safe environment by all important persons who stand to gain from school education program.
d. Students from different backgrounds and with diverse learning needs find equitable opportunities for support and growth.
e. The school environment is seen as a space that allows creative expressions.
f. The inter-personal relationships of students with peers and teachers foster mutual respect, self-esteem and team work.
g. The students do not display deviant and risky behaviours.
h. Individual students are able to make good subject, vocational and career choices based on the advice they receive during guidance and counselling.
i. The school year is well-planned and designed with good quality learning processes that demand rigour and discipline in students.
j. Teachers and parents are able to meaningfully communicate and support student learning.
k. The school receives adequate support and respect from the local community.
l. The administrative policies and practices keep students' achievement and holistic development at the heart of all decision-making processes.

Guidance and counselling in school enable students to recognize their abilities, enhance their self-esteem and coping skills, improve their inter-personal relationships, promote better decision making and become self-directed in adapting to life and its challenges.

Key Takeaways

1. A structured guidance and counselling system needs to be place in schools to create an accepting and nurturing environment in schools to foster students' learning, mental health and life choices.
2. Guidance would help students make informed decisions about their education, career choices and personal development, while counselling will focus on personal, emotional and behavioral issues affecting students' academic performance and well-being.
3. Teachers are best placed to offer guidance and counselling to students in one-one-one sessions, in small groups, in classroom lessons, at times of crisis and also through peer mentoring. The purpose is to help students develop holistically. More intense and intriguing cases can be referred to professional counsellors.
4. To be offer effective counselling, teachers need to have some knowledge of macro- and micro-counselling skills for which they would be trained with adequate resource support. They should also inculcate a few counselling qualities such as self-awareness, open mindset, empathy, unconditional positive regard, genuineness, trustworthiness etc.
5. A comprehensive curriculum needs to be developed integrating guidance and counselling into core subject areas with focus on teaching students the empathy, teamwork, regulating emotional reactions, stress management, conflict resolution, handling academic and peer pressure, and choosing career paths aligned with their interests and values.
6. Attention would be paid to build a positive and nurturing school environment to optimize the impact of counselling services for students.
7. Teachers would determine a set of criteria to evaluate the extent to which the services offered have benefitted students on the basis of their as well as parents' feedback.
8. The guidance and counselling program is to be monitored and evaluated at regular intervals so as to effect mid-course corrections to address the evolving needs of students.
9. On an overall basis, the school-based guidance and counselling would enable students to recognize their abilities, enhance their self-esteem and coping skills, improve their inter-personal relationships, promote better decision making and become self-directed in adapting to life and its challenges. As a result, students would remain physically and mentally healthy and comfortably practice positive learning habits.

Section 2.6

Educational Technology in Schools

"*While education will play a critical role in this transformation (Inda's transformation into a digitally empowered society and knowledge economy), 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 bi-direction*" (NEP 2020, 23.1)

Technology is a broad term used for a variety of tools, methods and processes created by human beings to improve quality of life. In education, it encompasses technology of education and technology in education, popularly known as Information and Communication Technology (ICT). It includes a wide range of software and hardware tools and technologies, including digital devices, network and applications. In the past decades, ICT has transformed the way in which humanity engages with information.

The rapid evolution of technology has brought about a profound change in the education system, redefining conventional learning and teaching patterns to be more engaging, interactive, and inclusive. Recognizing the role of digital tools in education, the NEP 2020 prioritizes incorporating technology to improve learning outcomes, narrow the digital gap, and establish a future-proof education system. In accordance with the National Policies, Odisha has made considerable strides in embracing technology-enabled learning as a way of propelling education transformation and inclusive learning throughout the state. With a heterogeneous student base and widespread geographical challenges, Odisha also has distinct obstacles in providing quality education with equity.

The NEP 2020 emphasizes the integration of technology for equitable, inclusive, and quality education. It envisions a digital transformation across various dimensions of the education system, enabling personalized learning experiences, effective governance, and teacher capacity-building. Technology is not just a tool but a transformative force in enhancing equity, accessibility, and learning outcomes. Technology can be leveraged to create inclusive, engaging, and future-ready learning environments. Technology tools are 'good slaves' but 'bad 'taskmasters'. A balanced approach to the selection and use of tools respecting the digital rights of children can bring quality and equity in education system. The adoption of evolving and emerging technologies such as Virtual Reality (VR), Augmented Reality (AR), gamification, Machine learning and data science and AI-based simulations can improve the teaching learning and assessment process, supporting teacher preparation and professional development, enhancing educational access, and streamlining educational planning, management and administration.

Technology in education has the potential to play the role of a significant extension of human capabilities, and way of making teaching, and learning more effective. The integration of smart classrooms, e-learning platforms, generative artificial intelligence, augmented reality and virtual reality, AI for Youth (YUVAi) and online teacher development programs can contribute to overcoming the challenges while making learning more individualized. Technology makes

learning universally accessible and qualitative for all students in the form of interactive video content, audio contents, contents in sign languages, simulated experiments, forums and chatbots etc. It makes learning individualised by providing need-based interventions by following the Universal Design of Learning (UDL). Exposure to different online professional development programs through Open Education Resources, Learning Management System (LMS), laboratory simulations, and open-source mobile applications will make teacher enabling and empowering. Technology adoption can enhance the governance framework to facilitate real-time monitoring, evidence-based decision-making, and implementation of policies.

2.6.1 Context of Educational Technology in Odisha

India has made significant strides in technology adoption in education, particularly with the increasing use of digital learning platforms and Government-led initiatives. India has embraced technology in education, especially after the COVID-19 Pandemic, which accelerated the shift to digital and hybrid learning models. Many Government-supported platforms like NROER, ePathshala, DIKSHA, PM e-Vidya, SWAYAM, NDEAR, NETF, Online NISHTHA, Vidya Samiksha Kendra, e-Jaadui Pitara, Sahyog, Manodarpan, Teacher Tara, Prashast, and APAAR, etc. became crucial in providing free access to quality educational resources. However, regional disparities, infrastructural gaps, and digital literacy challenges still hinder the widespread implementation of technology in education. Odisha, being a diverse state with a significant tribal and rural population, faces unique challenges in educational technology adoption while making notable progress through state-specific initiatives.

Odisha has recognized the potential of technology in transforming education and has implemented several key initiatives to promote use of technology in education. Digital libraries are being developed to align with NEP 2020, ensuring students access to high-quality digital content. Schools are being provided with e-learning resources, tablets, and cloud-based learning platforms to support blended learning models. The state Atal Tinkering Labs (ATLs) under NITI Aayog's Atal Innovation Mission seek to promote STEM education, robotics, and AI-driven learning. These labs provide hands-on experience in coding and scientific experimentation, fostering problem-solving and critical-thinking skills among students. Several Odisha Adarsha Vidyalayas, Kasturba Gandhi Balika Vidyalayas (KGBV) and government schools have introduced Smart Classrooms with digital boards, projectors, and interactive content. Virtual learning platforms and pre-recorded video lectures are being integrated into classroom teaching. Vidya Samiksha Kendra (VSK) is a state-level data analytics platform that monitors school performance, student attendance, and teacher training programs. Using AI-based analytics, VSK helps policymakers make informed decisions on curriculum development, digital resource allocation, and academic interventions.

All the 30 DIETs in the state have been equipped with studio for developing e-contents in Odia and other tribal languages. Teacher educators from DIETs have been oriented on education technology level-1 and level-2 by the CIET. Five TV channels have been telecasting contents based on the syllabi of the state school boards under One Channel - One Class program: the channel No. 138 for class 1-5, channel No. 139 for class 6-8, channel No. 140 for class 9-10,

channel No. 141 & 142 for class 11-12. Besides this, OSEPA YouTube, Madhu APP, e-content in local languages, provision of smart board in high schools and elementary schools, Smart TV for Anganwadi centres, etc. were made available for teaching and learning.

2.6.2 Educational Technology Solutions for School Education

A strong digital infrastructure is the foundation of effective technology adoption. Many remote areas in Odisha lack proper broadband or mobile internet connectivity, making digital learning inaccessible. The government can collaborate with telecom providers to expand 4G/5G networks and establish Wi-Fi hotspots in schools. Provision of digital devices to all government schools and solar-powered solutions for remote regions can minimize the digital gap. Digital libraries can be opened in the schools with textbook, stories, novels, articles, etc. in different languages. AR and VR laboratories can be set up at cluster / block levels for the benefits of learners.

To bridge the digital divide, technology must be accessible to all students, including those from inaccessible areas, marginalized communities, and children with disabilities. Localized digital content in multiple languages, including Odia and tribal dialects, may be developed. Different types of Digital contents must be available for the benefits of children with disability. For this, the government can make MoU with different institutions and agencies working for the children with disability.

A state level Educational Technology Cell will be created to ensure implementation and monitoring of educational technology initiatives. It will coordinate with government bodies, technology companies, and academic institutions to promote innovation. The cell will be composed of education experts, technologists, policymakers, and representatives from schools, teacher education institutions and universities. It will work under the guidance of the state education department and National Digital Education Architecture (NDEAR) to ensure smooth execution of digital education policies.

AI-powered adaptive assessments can identify learning gaps and suggest targeted interventions. AI-based analytics platforms can help monitor attendance, participation, and performance in real-time. Predictive analytics can identify students at risk of falling behind and enable early intervention strategies. AI-driven dashboards can assist teachers and administrators in making data-backed decisions to improve instructional methods. Chatbots and virtual assistants can provide 24/7 support to students by answering queries and guiding them through lessons. Technology can be used for assessing learning of students at different levels for providing immediate and personalised feedback to stakeholders of education. Adaptive technology can be used for assessing learning of students with disability.

Teachers play a crucial role in technology integration inside the classroom. Regular workshops and certification programs can be organized to train teachers in digital pedagogy. Creating networks where teachers can share best practices, lesson plans, and experiences will help to build a stronger technology integration community. Platforms like DIKSHA can facilitate peer-to-peer learning. Online training through NISHTHA or SWAYAM platforms can be provided to all teachers in phased manner.

With increased online learning, students must be protected from cyber threats. Schools should educate students, teachers, and parents about safe internet practices, phishing scams, and data privacy. Educational technology platforms should follow strict data protection policies, and government regulations should ensure safe digital learning spaces for children.

As a cross-cutting area, technology need to be integrated in the school curriculum, textbook and learning teaching. Curriculum must provide scope for the teachers and learners to integrate technology in learning process. All the textbooks must be energized with QR codes which will open a wide variety of content, video, worksheets and simulated experiments. By scanning a QR code, learners and teachers can get variety of high quality and interactive content based on the school textbooks. Textbooks must be available in both audio and video forms with sign languages for the benefits of children with disability. The contents can be developed in Digitally Accessible Information System (DAISY) format. This will make digital contents accessible to all learners any time anywhere.

All teachers need to develop content related skills, pedagogical skills, digital skills, technological skills and meta-cognitive skills to become an effective teacher in the 21st century. Teachers can utilise available open source softwares and repositories such as ePathshala, DIKSHA, NROER, Olabs, PHET, e-Yantra, Virtual Labs, and National Digital Library for teaching, learning and assessment. Teachers must be encouraged to be prosumers in their subject area so that series of contents can be produced with local flavour.

Key Takeaways

1. Schools would adopt technology-enabled learning to enhance accessibility, inclusivity, equity and quality in education.
2. All schools may be provided with minimum digital infrastructure like, computers, smart board, network, and digital contents, etc. AR and VR labs may be set up at block and cluster levels for making education lively and experiential.
3. Digital content in Odia and other tribal languages may be prepared for all subjects and grades and shared among students and teachers through different media.
4. Adaptive Digital contents must be available for teaching, learning and assessment of children with disability. Textbooks must be available in both audio and video forms with sign languages for the benefits of children with disability. For this, the government can make MoU with different institutions and agencies working for the children with disability.
5. State Educational Technology Cell in line with NETF may be set up to coordinate with different institutions and agencies for facilitating technology adoption.
6. All teachers are required to be oriented to the use of technology for development of digital contents, integration in teaching, learning and assessment.

Section 2.7

Physical Education and Well-Being

Physical education and well-being in school aims to help students learn to lead a physically active, vigorous, and healthy life. In this SCF, the term 'Physical Education' (or PE) has been used in the place of 'Physical Education and Well-being'. Physical Education consists of movements, drills, exercises, yoga, games, sports, and other activities that promote mind-body wellness. Physical Education should provide a wide range of age-appropriate and level-appropriate physical activities that develop knowledge of the body and of games and sports, together with a disposition towards perseverance, teamwork and sportspersonship. In addition, it also provides students with various opportunities for their career exploration, participation, and pathways. Physical education aims to foster appreciation for physical activity, skillful engagement in sports, resilience, tenacity, empathy, cooperation, and fair play.

The NCF-SE 2023 outlines a structured approach to physical education, ensuring its inclusion across all school stages from free play in early years to specialized training in secondary school. Physical education activities play an important role in promoting the development of *Annamaya* and *Pranamaya Kosha* through exercises, games and mindful practices. Activities such as love, gratitude and compassion cultivate the values of *Manamaya* and *Anandamaya Kosha*. Activities like critical thinking, problem solving and observation can support the development of *Vigyanamaya Kosha*. It advocates for equal access to physical education regardless of gender, ability, or resource limitations and calls for adequate facilities, trained teachers, and a supportive school environment.

2.7.1 Status of Physical Education in Odisha

Odisha School Education Program Authority (OSEPA) has undertaken *"Panchasakha Sikhya Setu"* and *"Kridangana club"* in class IX and X which encourage sports and life skill practice through minor activities in schools. Government has implemented Olympic Value Education Program (OVEP) since last three years, which aims for students' participation in and appreciation of the value of Olympic Games. This program and the centers established for the purpose aim to nurture top-tier athletes by providing world-class infrastructure, coaching, and sports science support. Schools are being encouraged to identify and train students, who are having potential in sports and games. Odisha has been participating in the "*Khelo-India*" program to promote sports at grassroots levels and encourage schools to conduct inter-school and district-level competitions. The Mid-Day-Meal (MDM) scheme ensures that students receive proper nutrition, which has a crucial role for their physical health. Special attention is given to improving the nutrition levels of students in tribal areas. Schools are working on inclusive Physical Education programs that accommodate students with disabilities. Adaptations in games and activities ensure participation of all students to make the program more inclusive. All the government schools for the elementary to the secondary level are provisioned with sports grant of Rs. 5000/- per Primary school, 10,000/- per Upper Primary

school, and 25,000/-, per Secondary to Sr. Secondary school for expenses on procuring sports equipment for indoor and outdoor games (OSEPA Annual report 2023-24). The state government has taken several steps to promote sports and physical fitness in schools by integrating physical education into its school curriculum. However, all these efforts are sporadic in nature.

In Odisha, many schools face challenges such as lack of sports infrastructure, sports equipment, dearth of physical education teachers and standardized methods of assessment. Physical education is an undervalued subject and is often seen as a leisure-time activity. There is a gap of knowledge due to the shortage of scholarly researchers and a structured physical education curriculum at school level, which demotivates the students and parents towards participation in physical activities. Efforts have been made to train general teachers to conduct basic physical education sessions in the absence of physical education teachers.

2.7.2 Learning Standards

Learning standards for physical education across stages flow across four core areas: (i) motor and movement skills to participate in different physical activities; (ii) appropriate personal and social behavior; (iii) mental engagement in physical activities; and (iv) setting and achieving goals or targets. They progress in complexity and diversity along these four core areas across stages. For example, movements and skills start with learning basic skills such as kicking, hitting, catching and throwing, which progress to the next level by combining them with movements, e.g., throwing while running. This further progresses to the next level by combining more than one movement with skills, e.g., running, jumping and catching simultaneously or anticipating, diving, and catching the ball on the move. Similarly, personal and social behavior ranges from simply observing and following rules at the Preparatory Stage to regulating one's own behavior and that of the teammates. Mental engagement spans around observing and finding patterns at the Preparatory Stage and runs into game strategies by the end of the Secondary Stage. Setting targets and recording progress begins with simple things like being able to just record your progress against a target set by the teacher and goes on to assessing progress in terms of efforts, processes, and outcomes.

By the end of the Secondary Stage, every student should be able to:

a. demonstrate skills and knowledge to participate in diverse physical activities or at least play or perform in one sport or physical activity well.

b. develop resilience, tenacity, and interest in the pursuit of excellence.

c. nurture empathy, fair play, and cooperation.

The curriculum follows a 'Nested' approach, with core Learning Standard (LS-1) and an essential subset of skills (Learning Standard 2 or LS-2) for immediate implementation. The LS-1 details the full range of curricular goals and competencies across physical education. These should be accomplished by all schools as soon as they add to the required resources for physical education. Nested within this is a subset called LS–2. These should be accomplished by all schools from the very initiation of the implementation of this SCF. The detailed curricular goals and competencies are given under annexture.

2.7.3 Content Selection and Organization

Physical education will be a core curricular area with its own standard of pedagogy and assessments. All students will participate in physical education classes throughout their school journey, and schools must ensure to provide adequate resources and equal opportunities for all students, including those with disabilities. In all stages, children learn the best when they actively participate by engaging their senses and using their limbs as well. The Physical Education curriculum will follow a structured yet flexible approach across different school stages.

At the *Foundation Stage*, teaching about health and hygiene practices ensures physical well-being in the long term. Children naturally take to exploratory play-based activity in the early years. Children exposed to age-appropriate physical, educational, and social activities through play-based methods learn better and grow better.

In the *Preparatory Stage*, emphasis will be given to introduce sports requiring more formal engagement in physical activity. Students will spend most of their time in free play and only a little time in structured sessions. For free play to be effective and challenging for the students, the school can allow students to creatively utilize objects and materials around them that are easily available in the neighborhood. The objective is to provide students with enough objects and spaces to play different kinds of games, either independently or in group. Free play is not guided but is monitored. Teachers and facilitators need to keenly observe all the students throughout the duration. The teacher can introduce simple games which do not require a lot of explanation and are intuitive. The facilitator can either create or find games which are linked to specific skills that need to be taught. For example, jumping and hopping can be done through animal movement games like frog jumps, and running. *Gilli Danda* can be used for hand-eye coordination.

In the *Middle Stage*, students continue to play local games, but have more structured sessions. Students have higher proficiency with simpler games and can be introduced to popular sports gradually. The students at this stage will learn more about their bodies and learn individual practices such as yoga and strength exercises, in greater detail. They will learn to create their own warm up and cool down routines.

In the structured sessions, the teachers need to gradually bring in an understanding of more rules that will need to be remembered while playing. Specific skills needed to play popular regional sports can also be introduced. Both objectives can be met through simpler versions of the sport to begin with, and with each grade, more skills and rules of the sport can be introduced. Slowly, the complexity can be increased by playing mini versions of the sports with most of the rules in place, while also building individual capacities, such as, observation, reflection, emotional regulation, expanding spatial awareness and peripheral vision. Simultaneously, social capacities such as effective communication, collective decision making, working together towards a common goal and other such capacities will also be developed. Emphasis also needs to be given to students taking more responsibility for building a culture of inclusive sports at school. They need to play an active role in ensuring that all students feel safe and are encouraged to play.

At the *Secondary Stage*, selected students can be given a choice to engage with certain sports more seriously than others, while other students will be encouraged to play multiple sports. The sports can be played with all the international rules and with all its complexity. Students who choose a particular sport more seriously can be trained more rigorously through sports-specific drills. Playtime for students needs to be balanced with drills based on student interest. Those who are not keen on building superior skills should be allowed 'free play' with different sports and be not be forced to pick one particular sport. There should also be sufficient focus on building strength and flexibility through Yoga and strength conditioning. Students must be taught about common injuries and how to avoid them through practice.

The emphasis on circle time and building a culture of sport must increase at this stage. Students should be encouraged to discuss their emotional states while playing more openly with one another. Students must be taught to set right examples for younger students and help teachers in organizing school sports events. For example, senior students can help organize athletic events on campus. They could also be referees or umpires for games conducted for younger students. Secondary students can be given leadership roles, which will help them build their skills too. For example, a student can be asked to facilitate circle time, with the instructor only participating as an observer.

It is also important to include local and indigenous games and sports, such as Hockey, Ultimate Kho-Kho, Circle Kabaddi, *Kusti*, *Malkhamb*, *Bagudi Khela, Puchi, Kelli-Badi, Chhoti Para, Bohuchori, Dala Mankudi, Kit Kit, Luchakali, and Daudi Dian* (Skipping), among others. In various sports festivals, local sports, such as *Chhau dance* and *Paika Akhada,* which are martial art dance forms can be showcased to develop agility and balance. Highlighting legendary sportspersons of Odisha in the curriculum can inspire students and motivate them towards games and sports. Furthermore, every school from primary to secondary, should have a physical education trainer to enhance students' understanding of various sports. The trainer can also assist in guiding students towards potential sports careers. Yoga classes, particularly Yogasana and Pranayama, should be mandatory for all stages in schools. Other rhythmic activities and exercises, such as aerobic exercises, mass physical training, Lezium, and flag drills, may be practiced periodically to improve coordination.

Across all stages, 30 minutes of free hand exercises for every class is mandatory for complete physical fitness of children. Understanding of preparation of games, inclusive participation, self-reflection, and emotional regulation are encouraged through "circle time." The curriculum also accounts for weather conditions, recommending timetable adjustments and indoor activities like yoga, carom, chess, etc. and free hand exercises, HIIT (High Intensity Interval Training), MIIT (Medium Intensity Intermittent Training) when necessary. Today's technology & digital resources, when used meaningfully, can complement traditional methods and enrich the learning experience, making it more interactive and enjoyable. Teachers discussing legendary sports personalities should prioritize local athletes and sports personalities to inspire students.

2.7.4 Pedagogy

Like other subjects, giving space to students' context, respecting students as individuals,

providing opportunities, connecting to real life, giving level-appropriate tasks, deciding content based on learning outcomes, understanding the learning levels of students, and providing periodic assessment and feedback are effective teaching-learning practices in physical education too. Physical education requires teachers to demonstrate so that students can observe, practice and learn. Time should be provided for interactions moderated by teachers before and after the activity. Regular progressive practice and layered learning lead to proficiency. Students learn best when they have a diverse set of activities to choose from. Schools should design a range of activities and sports for all students, including those with disabilities. Teachers should encourage sportspersonship, avoiding personal comparisons, and focusing on skill acquisition. A motivating environment and a focus on personal improvement provide students with a positive and satisfying learning experience. Concrete planning of the Physical Education class is the key to one's instructions such as, avoiding injuries through warm up and cool down activities, ensuring safety in the use of equipment and space, teacher demonstrations and modeling, planning for mitigating challenges for different groups of students, etc. In schools, teachers should incorporate Odia rhymes, local music, and songs for warm-up exercises and aerobics. Games and activities must be chosen so that students of all genders and abilities can participate. Teachers must encourage active involvement, support students to acquire skills, acknowledge and appreciate growth and improvement and give everyone a chance to participate, be sensitive to students' feelings of pressure or anxiety, and treat every student fairly. A safe environment in physical education must be created where students feel emotionally and socially safe and receive respectful treatment, encouragement, support and fair redressal of grievances during a physical education class.

Regular training and capacity building for teachers is needed to address the shortage of physical education teachers, especially in rural areas, by providing training to general teachers in basic physical education pedagogy.

2.7.5 Assessment

Inclusive teaching methods enhance skill acquisition more effectively than competitive approaches. Assessment should be performance-based like participation, demonstration, observation, and self-reflection. Values and dispositions should also be assessed through demonstrated performance. Written tests and viva-voce should be utilized for specific competencies, such as knowledge of one's body, growth and development, rules and regulations of games and sports. Student Records should be maintained by teachers. Students may be encouraged to maintain a portfolio and reflective journal.

Key Takeaways

1. At least 3-4 periods of Physical Education per week will find place in school timetables.
2. Physical Education cell can be established at state level and at DIETs to ensure that implementation in schools is not sporadic.
3. Allocate adequate infrastructure, sports equipment and sports facilities in schools. Develop separate kit/ sports room for children.

4. Physical education must follow a structured yet flexible approach, ensuring its inclusion across all school stages, free play in early years to specialized training in secondary school.
5. Schools must ensure to provide adequate resources and equal opportunities for all students, including those with disabilities.
6. It is important to include local and indigenous games and sports in schools.
7. Regular training and capacity building for teachers is needed to address the shortage of physical education teachers, especially in rural areas, by providing training to general teachers in basic physical education pedagogy.
8. Students may be encouraged to maintain a portfolio and reflective journal.

Chapter 3

Learning in the Foundational Stage

The Foundational Stage, covering children aged 3 to 8 years, is a critical period that shapes a child's cognitive, social, emotional, and physical development. Recognizing its significance, the NEP, 2020 and the NCF-FS, 2022 emphasize a holistic, play-based, and child-centred approach. In Odisha, Early Childhood Care and Education (ECCE) is provided through Anganwadi centres, private pre-schools, and government primary schools. The state follows the national guidelines for ECCE, while incorporating local socio-cultural aspects.

3.1 Importance of ECCE

Early Childhood Care and Education (ECCE), spanning the age range from birth to eight years of age, lays the foundation for life-long learning and development as neuroscience research informs us that 85 to 90% of brain development occurs during this period. The importance of ECCE lies in the fact that the quality of stimulation, care and learning, a child receives during this critical period, directly sets the tone for physical, cognitive, and socio-emotional development in later years of life.

The ECCE years cover three developmental stages: (a) *infancy* (0-2 years), in which the focus is on care, bonding, early stimulation, and sensory and motor development, (b) *preschool years* (3-5 years), in which the focus is on play-based learning, early communication, language development, and social and school readiness skills, and (c) *early primary years* (6-8 years), in which the focus is on structured learning, foundational literacy and numeracy skills, and moral understanding. If these skills do not develop optimally during the ECCE years, it will be hard to 'catch up' on these skills in later years.

ECCE is much more than preparation for formal education. It nurtures children's curiosity, confidence, and love for learning. Furthermore, it enhances their ability to work in groups, build relationships, learn cooperation and empathy, and resolve conflicts – all these soft skills are as important as academic skills for success in life. One of the powerful impacts of ECCE is to reduce social inequalities, giving all children, irrespective of their background, a fair start. Quality EECE supports children from poor and disadvantaged families by providing them a safe and stimulating environment where they can learn and grow. This helps reduce learning gaps and build a more inclusive society by contributing to SDG 4 (quality education) and SDG 5 (gender equality).

Research shows that investing in ECCE is also economically advisable, as it is shown to yield high returns in terms of improved health, reduced crime rate, and increased productivity. According to economists, every rupee invested in ECCE has the potential to yield returns up to seven rupees through reduced social costs and increased economic outcomes. In fact, ECCE can be truly transformative in promoting sustainable human development.

NEP 2020 envisages ECCE as a flexible, multi-faceted, play-, activity-, and inquiry-based

learning with a focus on developing children's social capacities, courtesy, ethics, personal and pubic hygiene, teamwork and cooperation, aiming to ensure their holistic development in physical, cognitive, language, social and emotional domains. The Odisha State Curriculum Framework aligns itself with the spirit of the National Curriculum Framework, while contextualizing it along the geographical, local and cultural parameters of the State. It is important for the State to prepare high-quality ECCE teachers through structured training modules in off-line or distance education mode in accordance with the Odisha State Curriculum Framework.

3.2 Importance of the Foundational Stage

Learning at the Foundational Stage shapes a child's cognitive, socio-emotional, and physical-motor development. Early interventions in literacy, numeracy, and critical thinking at this stage assist in lifelong learning. Odisha's efforts in foundational learning align with global and national priorities, ensuring holistic development and school readiness.

For the Foundational Stage, the NEP, 2020 advocates flexible, multi-level, and play-based pedagogy. It aims to build on children's natural curiosity, with play and hands-on activities as essential learning tools. Learning extends beyond classrooms – families, communities, and teachers play vital roles as partners in a child's development, creating a nurturing and enriching environment for growth.

Education in the state and the nation has greatly benefitted from the pioneering work of Maria Montessori, Gijubhai Badheka and Tarabai Modak and also from the recommendations of Kothari Commission (1964). The development of the syllabus and teaching-learning materials for the Foundational Literacy and Numeracy (FLN) grades has been thoughtfully aligned with the learning outcomes specified under the three Developmental Goals of the NIPUN Bharat guidelines.

A range of workbooks has been prepared, including those for Literacy and Numeracy for Grades 1, 2, and 3, as well as for the Shishuvatika, ensuring that children at different stages receive structured and age-appropriate learning resources. Teacher handbooks for all these classes have also been developed to support teachers for effective classroom transaction. The content organization follows innovative approaches, viz., the Four Block Approach to Literacy and the CRA (Concrete-Representational-Abstract) approach for Numeracy, which help in systematic and meaningful learning for early graders.

A variety of teaching-learning materials, such as Literacy kits (Big books, story cards, picture cards, poems, posters etc.) and Numeracy kits, under the *Ganita Kalika Andolan* (GKA), have been provided to enrich classroom practices. The *Jaadu Pedi*, a localized version of the NCERT's *Jaadui Pitara*, has been contextualized by each DIET and teachers have already been oriented to the use of the e-*Jaadui Pitara* App to integrate digital tools in learning. Although many schools face multigrade situations and infrastructural limitations, efforts are being made to create a rich learning environment with FLN materials displayed in classrooms and dedicated to Literacy and Numeracy corners. As recommended by the NCF, these initiatives aim to foster a joyful and engaging learning atmosphere. While preparing textbooks, contextualization will be made by including state-specific elements such as local art, festivals, and examples, making

the learning process relatable and meaningful for children.

For children aged 3-6 years under ECCE, quarterly assessments are conducted based on key competencies in domains such as physical, cognitive, language, socio-emotional, and creativity. In the FLN program, Odisha has adopted a comprehensive assessment system to monitor learning levels and improve educational quality. This includes School-Based Assessment, Tracking of Learning Outcomes, and Large-Scale Assessments.

School-based assessments are conducted regularly by teachers through informal daily observations, weekly assessments using a 4+1+1 strategy (4 days for teaching, 1 for revision, and 1 for assessment and remediation), monthly assessments recorded in *Shikhyana Sopana*, periodic assessments after every 8-10 weeks, and summative assessments twice a year to track overall progress. Tracking of learning outcomes is supported through spot assessments during school visits by the BRCCs and CRCCs, focusing on a quick review of learning levels for program improvement. Additionally, Large-Scale Assessments, like the State Level Achievement Survey and Foundational Learning Study, are conducted every 2-3 years to capture system-level learning trends rather than individual student performance.

The NEP, 2020 recommends that a curricular framework for the foundational stage will be developed by taking the guiding principles for the foundational stage based on NEP-2020. The NCF-SE, 2023 recommends that guidelines would be developed for high-quality ECCE at home for children in 0-3 years age group through by the Ministry of Women & Child Development (MWCD), following which children in the 3–6-year age group would learn in *Balvatika* (1-3) in Anganwadi centers. This would be followed by 2 years of early grade learning in the Primary school. The Foundational Stage would provide the Foundational Literacy and Numeracy skills to children in 3–8-year age group.

NCF-SE, 2023 has indicated that at the foundational stage, curriculum must be contextualized and rooted with context and pedagogy derived from children's life experiences, and the cultural & social context in which they grow.

3.3 Current Status of Foundational Learning in Odisha

In Government institutions, children in 3-to-5-year age group in the state get Early Childhood Care and Education in Anganwadi. Pre-School-1 is meant for 3–4-year-old children and Pre-School-2 is for 4-5-year-old children. From 2025-26, children in the 5–6-year age group go for Pre-School-3 in the *Shishuvatika* class of primary schools. This is newly initiated in all the Primary Schools of the state before Class 1. Primary/Elementary teachers are teaching the 5–6-year-old children as a part of third year of the Foundational Stage. Teachers are being trained for *Shishuvatika,* for which workbooks and teacher handbooks have been prepared. In urban and semi-urban areas, private schools also run good number of pre-school centers in the State. Following the recommendations of NEP, 2020, NCF-FS, 2022 and NCF-SE, 2023 Odisha has reorganized the Foundational Stage as discussed above.

Several thinkers in Odisha promoted mother-tongue based education in pre-independent India. The *Bana Vidyalaya* established by Gopabandhu Das and his 4 colleagues known as *Pancha Sakha* promoted mother-tongue based education using the *Loukik Sahitya* (folk literature)

available in the form of folk stories, songs, rhymes, riddles, etc. They also promoted child-centred, play-based, and inclusive learning. His educational philosophy, rooted in holistic development, inclusivity, and value-based learning, holds immense relevance for the foundational stage of education. His emphasis on character-building, nationalism, and education in the mother tongue aligns closely with the principles of NEP 2020, which prioritizes child-centred, play-based, and inclusive learning. This school advocated for learning in the home language, believing that it enhances comprehension and critical thinking skills. The NEP 2020 echoes this vision by recommending mother tongue instruction up to Grade 5, fostering better conceptual understanding and cognitive development in early childhood.

Gopabandhu envisioned an education system deeply rooted in cultural values, morality, and community participation. His philosophy emphasized experiential learning, character building, and social responsibility. Integrating *Laukika Sahitya* (folk literature) in foundational education aligns with his ideals, fostering holistic development through play-based and contextually rich pedagogy, as recommended in NEP 2020. Storytelling sessions featuring Odia folktales like *Kanchi Abhijana* or *Dharama* can instil moral values, while role-playing, puppetry, and visual aids can enhance engagement. Traditional Odia *Chhanda* (rhymes) and folk songs can support language development through call-and-response singing and rhythmic recitations. Including local *Paheli* (riddles) and *Lokakatha* (proverbs) in discussions nurtures critical thinking. Dramatization of folk stories helps build confidence, communication skills, and creativity. Folk tales about nature can promote ecological awareness through activities like tree planting and nature walks.

Odisha, in consonance with national focus and the NEP, 2020 recommendations, has long been adopting multilingual education and has developed a multilingual education policy and has pressed into service an ECCE handbook called *"Nua Arunima"* and curriculum in 19 languages (17 tribal languages + 1 in Odia + 1 in English) for addressing children's learning needs and aspirations across different languages of the state. The contents including stories, songs, games and activities etc. have been contextualized to the needs of child populations across different regions of the state. At present, English is introduced as a language in Class 3, which according to the current NCF, is now to be introduced orally at the ECCE stage and also orally and in written form in Classes 1 and 2. As the NCF recommends for exposure of children to multiple languages at the foundational stage, Odisha needs to fill the gap with appropriate learning opportunities and materials. The state is now equipped to carry out this initiative at the ECCE stage and will have to develop learning resources and platforms in English for Classes 1 and 2 children. Besides this, the state has also developed textbooks and learning resources in 21 tribal languages in addition to Odia (the state language) for children in grades 1 through 3.

3.4 Content for Teaching

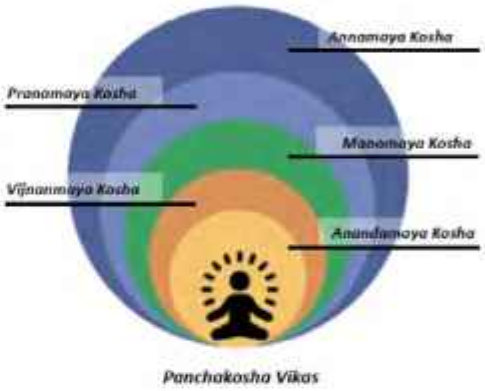
The teaching-learning process at the foundational stage will be enriched with a well-organized environment, engaging materials, and thoughtfully selected books. Content will align with competencies, learning outcomes, and pedagogical approaches while ensuring relevance to children's experiences, culture, and social context. Play-based, project-based, and activity-based methods enhance learning, supported by safe, locally sourced, and digital materials. A

print-rich, inclusive environment with picture books, graded storybooks, and poems fosters literacy.

The Indian vision of education propagates the idea that education must foster both inner and external development. The *Panchakosha Vikas* (the five-fold development), a keystone in Indian Educational tradition, emphasizes that learning about the external world must strike a harmonious balance with the development of the inner self. In the foundational years, spanning from the *Shishuvatika* to Grade 2, the educational focus will be rooted in holistic child development through five interconnected developmental goals related to the *Pancha Kosha*.

***Panchakosha Vikas* (Five-fold Development)**

Panchakosha, refers to five layers or five sheaths, along which the holistic development of the child takes place. These five layers are annamaya kosha (physical layer), pranamaya kosha (vital life force layer), manomaya kosha (mind/thought layer), vijnanamaya kosha (intellectual layer), and anandamaya kosha (expanded and blissful inner self layer). The holistic development of the child can take place if these five layers are taken into account and are nurtured (NCF-SE, 2023)



Children are nurtured to become effective communicators by fostering their listening, speaking, reading, and pre-writing skills, with an emphasis on emergent literacy in their mother tongue or home language. Rich oral experiences such as songs, poems, and stories play a pivotal role in this journey. Secondly, children are encouraged to become curious and involved learners by connecting with their immediate environment. This includes developing early numeracy skills like counting, measurement, and recognizing patterns, alongside building observation and inquiry skills through daily experiences. The third goal emphasizes the importance of social and emotional development, helping children learn to relate with others, manage emotions, and practice empathy, sharing, and cooperation through play and storytelling. Fourthly, children's physical well-being and independence are supported by activities that develop both gross and fine motor skills, along with raising awareness about health, hygiene, and nutrition. Regular participation in games, yoga, and physical activities ensures a balanced development. Lastly, children are introduced to the world of aesthetic and cultural appreciation through exposure to various art forms, music, dance, and local traditions, allowing them to express creativity through drawing, singing, and dramatization. Collectively, these developmental goals lay a strong foundation for lifelong learning, rooted in the child's context and culture.

Preschool-1 (Age 3+)

- Focus: Care, comfort, free play, exploration
- Activities: Rhymes, storytelling, sand play, blocks, water play, self-help routines
- No formal teaching of reading/writing

Preschool-2 (Age 4+)

- Focus: Language-rich environment, increased vocabulary, gross motor development
- Activities: Picture books, simple puzzles, pretend play, drawing, rhymes with actions

Preschool- 3 (Age 5+, *Shishuvatika***)**

- Focus: Readiness for literacy and numeracy
- Activities: Picture reading, oral expression, recognition of symbols (not letters), pre-math concepts, story sequencing

Class- 1 (Age 6+)

- Formal introduction of language and math learning in a play-based, integrated way
- Emergent reading and writing, basic number concepts, shapes, patterns
- Language is taught using local contexts, rhymes, dialogues, and short texts

Class- 2 (Age 7+)

- Further strengthening of literacy and numeracy skills
- Structured learning of language (sentence formation, vocabulary) and mathematics (addition, subtraction, measurement)
- Continued emphasis on experiential learning and integration with arts and environment

3.4.1 Principles of Content Selection

The content for the Foundational Stage will be sensorially engaging and rooted in children's life experiences, reflecting their cultural, geographical, and social contexts. It will be diverse and inclusive, catering to the varied interests of individual children while avoiding stereotypes. Language content will balance stories and poems with themes from the local natural and human environment. Mathematics content will also connect with the local environment to make learning meaningful. Art activities will be planned with clear learning outcomes, drawing inspiration from the local context of the school.

3.4.2 Ways of Organizing Content

In the foundational stage, learning will be facilitated through varied approaches such as project-based, story-based, theme-based, or an eclectic approach which will cater to the diverse needs and interests of young children. Learning becomes meaningful, when it is connected to children's immediate world and presented in an engaging manner. At this stage, children learn best when they actively engage their senses and use their hands to explore, experiment, and create. Therefore, the use of a wide variety of learning-teaching materials (LTMs), including simple toys, manipulatives, and activity-based resources, is crucial. Alongside these materials, access to children's literature and picture books plays a vital role in nurturing imagination, language, and early literacy skills.

Teachers will be empowered to design and develop simple, low-cost, no-cost and effective LTMs using locally available materials, promoting sustainability and relevance. Furthermore, involving children in the preparation of materials fosters creativity, ownership, and problem-solving skills. In today's world, technology and digital resources, when used meaningfully, can

complement traditional methods and enrich the learning experience, making it more interactive and enjoyable.

3.4.3 Activity Books and Textbooks

At the foundational stage, children engage more meaningfully with texts when they are exposed to a variety of forms such as picture books, storybooks, graded readers, poem cards, worksheets, and more. These diverse formats not only make learning joyful but also cater to the developmental needs of young learners. Bilingual books serve as a powerful resource to promote multilingual competencies, especially in contexts where children are exposed to more than one language.

For children aged 3-6 years, activity books are especially helpful in guiding teachers to sequence learning experiences effectively, while textbooks at this stage often serve dual roles as both content and workbooks. However, it is crucial to recognize that the learning process is not confined to textbooks alone. A wide array of texts from multiple sources will be integrated into classroom practices to enrich learning.

The design of foundational stage textbooks will be guided by key principles such as curriculum, discipline, pedagogy, technology, context, presentation, and diversity and inclusion, ensuring that textbooks are child-friendly, inclusive, and contextually relevant. The textbook development process will be a collaborative one, involving syllabus creation, content selection, designing, piloting, reviewing, and teacher orientation. Importantly, textbooks must guide teachers on how to integrate assessment seamlessly with learning through tasks, rubrics, and assessment tools embedded throughout the book. They will also provide clear suggestions for activities like projects, field trips, experiments, and learning tasks. When possible, a well-aligned teacher manual or handbook will accompany the textbook to offer further support, ensuring that teachers are empowered to deliver meaningful and engaging learning experiences.

3.5 The Learning Environment

An inclusive, welcoming, and joyful learning environment is fundamental for young children to achieve the competencies outlined. The classroom will be made colourful and lively, allowing children to feel safe, free, and eager to explore. The indoor environment will be thoughtfully organized with elements such as a running blackboard, well-defined corners for different types of play and learning, and spaces for drawing and painting both on the floor and walls.

Visual displays like weather charts, timetables, classroom norms, teacher-made charts, and children's portfolio bags create a sense of belonging and support children's learning in a visual and engaging manner. Equally important is the outdoor environment, where children get the opportunity to learn through free play and exploration. Features such as a sandpit, clay box, water play area, kitchen garden, and other outdoor play equipment provide rich, sensory, and hands-on learning experiences. Both indoor and outdoor environments will be designed to encourage creativity, communication, collaboration, and overall development of children, making learning natural, joyful, and meaningful.

A well-designed learning environment nurtures children's cognitive, social, and creative

growth. A picture library fosters language skills and curiosity through visual storytelling, while a science lab encourages hands-on exploration of nature and materials. A museum of objects and animals helps children connect with culture, history, and wildlife through interactive exhibits. A model home teaches life skills and social roles, reflecting Indian traditions. A garden promotes environmental awareness and hands-on experience with plants. A workshop and art room cultivate creativity through crafts, sculpting, and painting. An auditorium provides a space for performances, storytelling, and puppet shows, while a playground ensures physical development through active play.

Such enriching spaces can be integrated into schools and Anganwadis to create a dynamic, child-friendly learning atmosphere. Even flexible classroom corners can be transformed into engaging learning zones, fostering holistic development.

3.6 Pedagogical processes

Children are naturally curious, imitative, and full of energy. They learn by observing and copying others, asking questions, and exploring their surroundings. Their attention span is short, but they engage deeply in activities they enjoy, like storytelling, music, and play. Each child has unique interests and learns at their own pace. They are self-centered but develop social skills through group activities. Understanding these traits helps create a learning environment that nurtures their growth effectively.

The principles of pedagogy for the foundational stage emphasize a child-centered and play-based approach to learning, recognizing that young children thrive when education is tailored to their needs, interests, and abilities.

The following principles will inform classroom planning and instruction.

a. **A safe and stimulating environment is fundamental to development and learning at this Stage.**

   Joyful activities will help in utilizing all the sense organs of a child. Healthy and hygienic school atmosphere will ensure physical and emotional safety of a child which enhances the learning.

b. **Play is central to learning and development at this Stage.**

   Structured and well monitored sessions will include games (both indoor & outdoor), conversations, stories, music arts, craft and many more activities full of infotainment.

c. **Nurturing relationships between Teacher and Child forms the basis of teaching and learning.**

   Teacher will listen to children carefully and will be there fully with them.

d. **Physical development is very important at this Stage.**

   Development of Gross and Fine Motor skills along with Socio-emotional and Cognitive development will be the focus in classroom activities.

e. **Every child learns at their own pace and learning needs are addressed individually.**

   Teacher will recognize and accommodate the diverse and changing responses of children

and ensure that all children get meaningful opportunities to participate and succeed in the classroom.

f. Children at the Foundational Stage are most comfortable and learn best in their home language.

Teacher will use and celebrate children's home languages in the classroom while gently transitioning to school languages. Teacher will also ensure that all children feel supported and valued for their linguistic diversity.

g. Learning experiences in the classroom are deeply connected to children's lives and their contexts.

Teacher will incorporate local cultural elements and promote children's home languages in the classroom creating an inclusive and enriching learning environment.

h. Learning experiences are designed to build on children's previous understanding.

Planning moves from simple to complex ideas and concepts based on this principle.

3.6.1 Learning through Play – Conversation, Stories, Toys, Music Art, and Craft

All the methods are being discussed separately and vividly for making the learning more meaningful.

Conversations: They are very important for children's ability to connect with people and things around them. Continuous conversations with children in the classroom help to build relationships of trust.

Storytelling: Young children enjoy listening to the same story repeatedly as it helps them better understand and remember the content, engage with characters, and develop their imagination and vocabulary. Teachers should narrate stories with voice modulation and expressions, use books to tell stories, and involve children in various storytelling methods such as puppets, flashcards, and dramatization. Reading aloud from books, pointing to words, and using pictures help children appreciate the importance of print and develop reading skills. Selecting age-appropriate, culturally relevant stories and encouraging children to tell their own stories fosters a positive learning environment. Follow-up activities like drawing, role play, and discussions help reinforce the story's content and values.

Toy-based Learning: Young children learn best through first-hand experiences and working with actual objects, which helps develop their motor skills and hand-eye coordination. Toys, whether simple or complex, teach valuable lessons and encourage creativity, problem-solving, and strategic thinking. Using local toys and materials, like ring set puzzles, cotton dolls (*kandhei*), and kitchen sets (*roshei*), supports teaching and learning by fostering a spirit of exploration. Playing with toys and manipulatives helps children build stories, follow rules, and understand concepts of language and mathematics. Craft materials and fitness toys further enhance creative expression, self-confidence, and physical development.

Songs and Rhymes: Children love singing songs and rhymes, which are excellent for language learning. Songs can teach various concepts, such as animals, movements, being careful, and

counting. Physical movements with songs enhance motor skills and help understand concepts. Local songs and rhymes in different languages boost vocabulary, imagination, and multilingual abilities. Teachers can involve parents and the community in singing familiar and humorous songs. Songs promote interaction, cooperation, and enjoyment among children.

Music and Movement: Music brings joy and stimulates brain development in children through rhythms and simple musical instruments. Teachers can incorporate songs with actions, gestures, and body movements to enhance learning. Children can participate in music-making with instruments, body percussion, and movement games. Various local, homemade, or purchased instruments should be made available for exploration. Music activities, including dancing, singing, and using props, support children's understanding of musical concepts and provide opportunities for creative expression. Teachers can use diverse music styles and sources to enrich children's classroom experiences.

Art and craft: These activities are wonderful mediums for children to express their ideas, emotions, and feelings. Drawing involves using various materials like crayons, sketch pens, and charcoal on different surfaces, enhancing fine motor coordination. Painting explores wet colors on paper, floor, or fabric with brushes or alternative tools, promoting creativity. Pasting activities involve glue and various materials to create collages, while clay molding allows children to shape and paint objects. Tearing and cutting paper, folding, and constructing new things from cardboard, sand, and mud further develop fine motor skills and creativity. These activities provide valuable opportunities for self-expression and exploration.

Indoor Games: Just as physical exercise keeps the body fit and healthy, mental exercises like games of strategy, logic, and word puzzles are crucial for children's cognitive development. Activities like jigsaw puzzles, blocks, and mazes enhance spatial reasoning, while strategy games like tic-tac-toe and chess develop problem-solving skills. Playing games such as Snakes and Ladders, and Ludo teaches counting, strategy, and collaboration. Riddles and jokes promote creative thinking and innovation. Incorporating puzzles, arithmetic games, and problem-solving activities in the classroom fosters logical deduction, mathematical reasoning, and creativity. Emphasizing India's rich traditions of problem-solving and riddles ensures culturally relevant learning experiences.

Outdoor Games: Old tyres, bricks, bamboo, and short trees can be creatively used to make play equipment for children. Younger children enjoy simple group games, while older children follow basic rules in games like *pithoo, gitte,* and blind man's buff (*andha putuli*). Safety during outdoor play is crucial, and teachers should supervise to prevent injuries. If outdoor space is unavailable, indoor physical games can be played, but outdoor play is preferred for optimal development.

Spending Time in and with Nature: Exploring nature through visits to local woods, parks, and spending time with plants and animals nurture children's curiosity and helps develop a connection with the environment. Ancient Indian texts highlight the importance of experiencing the five elements (*Panchabhutas*) for holistic development. Introducing direct experiences with water, air, and earth helps children understand their connection with these elements.

Field Trips: Local field trips to places like vegetable markets, doctor's clinics, bus depots, post offices, and police stations can introduce children to new, intriguing environments and teach them valuable lessons. These excursions reinforce classroom knowledge, encourage curiosity, and help children make connections with their existing knowledge. Additionally, they foster self-management and social skills, enriching the overall learning experience.

3.7 Strategies for Literacy and Numeracy

Teaching strategies emphasize storytelling, literacy development, social interaction, and experiential learning, all within a safe, inclusive, and stimulating environment that adapts to diverse learning needs. By integrating subjects through thematic and project-based learning, children develop a deeper understanding of concepts and see the real-world connections in their education.

Learning through play fosters holistic development by engaging children in meaningful, hands-on experiences that nurture their curiosity, creativity, and social skills. Conversations build connections and trust, allowing children to express their thoughts freely. Storytelling captivates young minds, enhancing imagination, language skills, and cultural awareness through voice modulation, dramatization, and interactive reading. Toy-based learning encourages problem-solving and exploration, using everyday objects to develop motor skills and cognitive abilities. Songs and rhymes make learning joyful, reinforcing language, rhythm, and movement while fostering multilingualism and community involvement.

Music and movement stimulate brain development, creativity, and coordination, integrating rhythms, gestures, and instruments into playful learning. Art and craft offer self-expression through drawing, painting, molding, and constructing, refining fine motor skills and imagination. Indoor and outdoor games provide cognitive, social, and physical enrichment, with traditional and strategic games sharpening reasoning and collaboration. Spending time in nature deepens children's understanding of their environment, fostering an appreciation for the elements and sustainable living. Field trips extend learning beyond classrooms, connecting children with real-world experiences and strengthening their social and observational skills. Through these diverse and immersive methods, play-based learning creates a rich, engaging foundation for lifelong learning and holistic development.

In the foundational stage, pedagogy must be rooted in the child's immediate context, culture, and experiences. Integrating local sports and traditional games such as *Bahu Chorie, Kho-Kho, Pili Kathi/Gilli Danda, Puchi, Bhuja Khela, Bagudi, Luchakali, Khapara Kati,* and *Bagha Chheli* makes learning joyful and experiential while supporting physical development, social interaction, and teamwork among children. These games contribute to the development of gross motor skills, coordination, rhythm, and a sense of cultural belonging. Furthermore, the use of local toys like *lakhakata* (lac toys), wooden animal figures from Nayagarh, clay dolls (*Mati Gudi*), palm leaf toys, and coconut shell crafts can be effectively integrated into classroom activities.

These toys are eco-friendly and provide ample opportunities for children to engage in imaginative play, develop fine motor skills, and learn through manipulation and exploration. Alongside, incorporating traditional art forms like *Saura* painting, *Pattachitra*, Applique work

from Pipili, and Terracotta craft enhances creativity, aesthetic sensitivity, and connects children to the rich artistic heritage of Odisha. Such culturally responsive and activity-based pedagogy makes learning relatable, meaningful, and holistic, aligning well with the vision of NCF-FS, 2022 and NEP-2020. It ensures that education in the foundational stage nurtures not only cognitive abilities but also cultural identity, emotional well-being, and overall development.

3.7.1 Understanding R1 and R2 in the Foundational Stage

- R1 (Pre-primary or *Shisuvatika* year): For children aged 5+ years (Shisuvatika), R1 focuses on school readiness through play-based, story-based, and activity-based learning. Emphasis is on developing social habits, language exposure, motor skills, and joyful exploration in a non-formal setting.
- R2 (Classes 1 and 2): For children aged 6–8 years, transitions gradually take place into structured learning while retaining a playful, interactive environment. Emphasis is on building Foundational Literacy and Numeracy (FLN) through oral language, reading readiness, number sense, and experiential learning in real-life contexts.

3.7.2 Fostering Literacy

Creating a strong foundation in literacy and numeracy requires a structured yet flexible approach that nurtures children's natural curiosity. Emergent literacy begins with exposure to print, storytelling, and early writing activities like scribbling, fostering an understanding of reading and writing before formal instruction.

The Four-Block Approach – focusing on oral language, word recognition, reading, and writing ensures balanced literacy development, with interactive read-alouds and creative responses playing a vital role. The teachers should implemnet four-block approach in an integrated manner in which the children spend time on each of the blocks on a rgeular basis.

While children are learning decoding, they should continue to engage with storybooks, e.g., listen to and respond to interactive reading-aloud of storybooks and write or draw in response to the text being read to them. Also, teaching of letters and vowels or varnas and *aksharas* can be organized in a clustered manner so that children can begin to read and write simple words and meaningful sentences soon after learning a few symbols, instead of waiting to learn all *varnas* and *matras* together.

Figure 3a

3.7.3 Fostering Numeracy

Approach to fostering numeracy and mathematical skills should be rooted in children's everyday experiences, progressing from concrete to abstract concepts while incorporating problem-solving and logical reasoning. When children engage with concrete real-life experiences, they

can understand the mathematical concepts easily. The following sequence can be followed to teach the abstract mathematical concepts.

E– Experience: Learning the mathematical concepts of concrete objects, e.g., counting concrete objects for learning numbers.

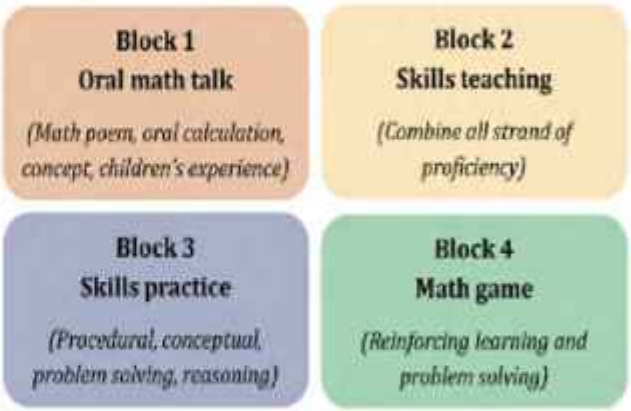
L– Spoken Language: Describing the experience in language, e.g., what is being counted, how many have been counted.

P – Pictures: Representing mathematical concepts in a pictorial form e.g., if 3 balls have been counted, these can be represented through 3 pictures of the ball.

S – Written Symbols: Mathematical concept that has been learned through concrete experience and pictorials can be generalized in written symbol form such as writing the number 3 for three balls.

Figure 3b

In learning Mathematics, children bring various mathematical skills from their surroundings and culture into the classroom, serving as a foundation for learning mathematics. Mathematics learning goals can be divided into higher goals, such as abstract thinking and problem-solving, and content-specific goals, like understanding numbers and shapes. Teaching should emphasize both, as they are interconnected. Incorporating mathematical processes, like problem-solving and communication, helps children achieve comprehensive mathematical proficiency and a positive attitude towards mathematics. The standards for mathematical proficiency can be categorized into the four blocks (*Figure 3b*) for daily classroom transactions.



3.8 Creating Positive Classroom Environment

A positive classroom environment further enhances learning by providing a safe, inclusive, and engaging space where children feel supported. Establishing clear classroom norms, using positive reinforcement, and fostering respectful interactions help maintain a conducive learning atmosphere. Addressing difficult behaviors with empathy, guiding children toward self-discipline, and using supportive language contribute to their emotional and social growth.

Organizing the environment effectively through flexible seating arrangements, vibrant displays, and learning corners – creates opportunities for exploration, collaboration, and independent learning. Learning corners dedicated to storytelling, puzzles, arts, and mathematics encourage hands-on engagement, while a print-rich environment promotes language development. By integrating these elements, educators can create a dynamic and holistic learning experience that fosters both academic proficiency and social-emotional well-being.

3.9 Assessment

Analyzing children's responses is essential for making teaching-learning processes meaningful, responsive, and inclusive. As emphasized by the NCF, the focus of assessment should not be on what children cannot do, but rather on what they are capable of achieving, while also identifying misconceptions, alternative conceptions, and specific learning gaps.

Assessment in the Foundational Stage focuses on observing children's developmental progress rather than formal testing. It aims to support children's growth, build confidence, and lay the foundation for lifelong learning. Teachers assess through systematic observations of children's participation, behavior, and learning processes, and by analyzing their creations and activities.

Tools like anecdotal records, checklists, and artifact analysis help gather insights into children's understanding and abilities. While some states conduct periodic and summative tests, it is more appropriate at this stage to focus on observation-based assessment that values children's involvement and creativity.

Odisha has initiated steps in this direction through tools like *Shikhyana Sopana*, which provides space for monthly tracking of children's learning and scope for improving instructional strategies. However, there remains a need to strengthen structured analysis of children's responses, not just in the form of scores but through deeper reflection on their learning processes, interests, and challenges.

The development and use of Holistic Progress Cards (HPC) in the state aligns well with the NCF's recommendation of providing a multidimensional and comprehensive picture of children's development. The integration of self-assessment, peer assessment, and parental feedback into HPCs is a significant step towards making assessment more participatory and reflective. However, teachers may require further support and capacity-building to make effective use of the narrative summary, going beyond mere grading to providing constructive feedback on children's cognitive, social, emotional, and creative development.

Documenting children's progress through multiple sources and communicating it meaningfully to parents and families will help in fostering confidence and a strong learning foundation in children. Odisha's framework is well-placed but could benefit from further strengthening teachers' understanding and use of assessment evidence for shaping effective classroom practices.

Key Takeaways

1. Understand R1 and R2 as a continuum and ensure a smooth transition from informal, play-based learning in R1 to semi-structured, activity-based learning in R2. Strengthen FLN through activities by introducing oral language, pre-literacy, pre-numeracy in R1 and gradually move to early reading, writing, and numeracy in R2.
2. Bring Preschool-1 and Preschool-2 to the Department of School and Mass Education.
3. R1 and R2 should be clear for all stakeholders. Ensure Trained Human Resources for R1 and R2.

4. At the foundation stage, R1 and R2 would be considered as a continuum to ensure a smooth transition from informal, play-based learning in R1 to semi-structured, activity-based learning in R2. Strengthen FLN through activities by introducing oral language, pre-literacy, pre-numeracy in R1 and gradually move to early reading, writing, and numeracy in R2.
5. Prioritize contextual and culturally relevant materials, promoting multilingualism and local knowledge systems. Adopt a play-based, experiential, and activity-oriented approach that supports holistic development integrating local culture, stories, local games and toys in the teaching learning process at the foundation stage.
6. Develop an integrated curriculum that reflects the Four-Block Approach (Oral language, Word recognition, Reading, Writing), ensuring balanced time and focus on all developmental domains. Use the Four-Block Approach to literacy and CRA approach to numeracy to structure daily learning. Encourage integration of art, music, movement, and local stories into daily routines.
7. Use continuous and informal assessment based on observations, portfolios, and child responses.
8. Foster language-rich and print-rich environments using songs, rhymes, storytelling, and conversations. Promote a safe, inclusive, and stimulating environment that nurtures exploration, play, and care at the foundation stage.
9. Provide age-appropriate infrastructure and equip schools with child-friendly furniture, learning materials, outdoor play areas, and sanitation that suited for foundational stage.
10. Support teachers through regular training, resource access, and collaborative planning time.
11. Establish monitoring systems, use school readiness indicators, child progress reports, and regular academic support to maintain quality.
12. Engage family through awareness programs, parenting workshops, and community-based learning initiatives for holistic development of child.

Chapter 4

School Subjects

The age-old hard separation among 'curricular', 'extra-curricular', or 'co-curricular' subjects/activities, in Indian Education System, has been waved in NEP 2020. In this chapter, some subjects, traditionally away from the list of curricular subjects, have been added aligned with the recommendation of the Policy and NCF-SE 2023. Suggestive timelines have been given at the end of the chapter with a view to reduce content load across Curricular Areas.

Section 4.1

Language Education

Language plays a crucial role in human cognitive, social, and cultural experiences, enabling individuals to connect with their locality, nation, and the world. Proficiency in languages enhances communication, cultural awareness, and cognitive abilities while fostering a sense of identity and belongingness. It is seen that teaching young children in their home language or mother tongue helps children to grasp concepts better. Therefore, NEP 2020 emphatically states, "*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/regional language.*" (NEP 2020, para: 4.11, p-13).

In multilingual India/Bharat, acquisition of mother tongue in the early stages and multilingual education throughout, promotes both cognitive growth and cultural unity and strengthens national integration. The National Curriculum Framework for School Education (NCF-SE-2023) also emphasizes that individuals knowing many languages not only gain the ability to communicate with a wider range of people but also develop expanded cognitive abilities. Thus, language learning is a fundamental aspect of education with far-reaching benefits.

Learning of multiple languages, including mother tongues, in a linguistically diverse state like Odisha will not only enable students to develop their abilities to express ideas and feelings in written and spoken forms, but also contribute to promote political, economic, social, and cultural life. It is also essential to perpetuate the values of a democratic society and brotherhood enshrined in the Constitution of India/Bharat among students at early ages. "*Language education in schools must specifically aim to achieve oracy and literacy, effective communication, literary and creative capacities, multilingual capacities, appreciation and*

engagement in culture." *(*NCF-SE-2023, Section 2.1)

4.1.1 Status of Language Education in Odisha

Odisha is a linguistically diverse state with a rich tapestry of languages spoken by various communities. Odisha's linguistic diversity reflects its rich cultural identity, emphasizing the need for continuous efforts in language preservation and promotion. Odia has been declared as a classical language by the Government of India on 20th February 2014 because of its historical significance and rich cultural heritage. It is the official language spoken by 82% of the population. Besides Odia, many regional and tribal languages are spoken in different regions of Odisha.

Odia is an ancient language having a rich oral tradition spanning a heritage of two thousand three hundred years, resulting a classical language of the current time. Ancient poets Sarala Das, Jagannath Das, Balaram Das, Upendra Bhanja, Deenakrushna Das, Abhimanyu Samanta Singhar, Bhaktacharan Das have substantially contributed to the linguistic development of the state.

The idioms and proverbs, commonly known as *Dhaga Dhamali, Prarthana, Janana, Slokas, Stories, Sodasha, Chautisha, Koili and Poi* in Odia language have strengthened and shaped the knowledge and literature of the state. Odisha's folklore or *Aaimaa Kahani and Poems* enrich the linguistic landscape of the state. Bhagabat Tungi, local clubs, and '*Pathagar*' (local library) in many villages of Odisha provide opportunities for Odia/regional language development.

The Ganga dynasty's patronage of Sanskrit language and literature, Central Sanskrit University, Shri Jagannath Sanskrit University and *Mathas* in Puri play a vital role in the development and preservation of the Sanskrit language, contributing significantly to Odisha's linguistic heritage.

In Modern times, Madhusudan Rao's *Barnabodha* enriched with Odia letters of *Alphabet, Matra, Phala, Juktakshyara, and Numbers* shaped the foundation of an Odia alphabet book in literacy. Veteran writers like Radhanath Ray, Fakir Mohan Senapati, Madhusudan Das, Gangadhar Meher, Madhusudan Rao, Nanda Kishore Bal, Kuntala Kumari Sabat Lakshmikanta Mahapatra and others have established the modern trend of Odia literature. Meanwhile *The Satyavadi group* led by Utkalmani Gopabandhu Das, Neelakantha Das, Krupasindhu Mishra, Godabarish Mishra and Acharya Harihar Das, ignited the Odia nationality through their literature and education in Odisha.

However, certain challenges in regard to language education in Odisha include: low level of literacy, difference between home language and school language, growth of English medium schools, rote learning, low-quality learning materials, memory-based assessment, focus on content-completion rather than competency-based teaching, textbook centric approach to language learning, and inadequate attention to linguistic diversity, etc. Under these circumstances, it is imperative on the part of the state's education system to follow the idea of mother-tongue based multilingual education at least up to middle stage of education both in public and private educational institutions.

4.1.2 Multilingualism

The NEP 2020 states, *"Multilingualism has great cognitive benefits to young students, and 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).

The NCF-SE 2023 aims to enable all our students to learn at least three languages, leveraging our socio-cultural context and resources. Our languages are one of our greatest heritages, providing opportunity for our students to learn multiple languages. Proficiency in several languages has a range of benefits, including communication, expanding cultural richness, and development of multiple cognitive capacities. The three languages that our students will learn in their school years are denoted as R1, R2, and R3 in this document.

Odisha being rich in linguistic diversity needs to give priority to each language. The local language, including tribal languages, spoken in many parts of the state have equal importance. Exposure to multiple languages in oral form provides significant cognitive and socio-emotional stimulation to the child. Teachers will be encouraged to use a bilingual approach, including bilingual teaching-learning materials, with those students whose home language may be different from the medium of instruction.

Three-language Formula

"The three-language formula will continue to be implemented while keeping in mind the constitutional provisions, aspirations of the people, regions, and the Union, and the need to promote multilingualism as well as promote national unity." (NEP 2020, para 4.13). The three-language formula must promote the rich cultural heritage, diversity and multilingualism of the state. In the context of Odisha, it is suggested to follow the following formulae aligned with the recommendation of NEP 2020:

1. Language 1 (R1): Mother Tongue/Home language
2. Language 2 (R2): Sanskrit/Hindi/English or any other regional language other than R1
3. Language 3 (R3): Any language other than R1 and language not opted as R2.

In various stages of school education in Odisha, R1, R2 and R3 will be used as follows:

- *Foundational stage (Pre-school to Grade 2) and Preparatory stage (Grades-3 to 5):* R1 & R2
- *Middle Stage (Grades 6 to 8) & Secondary Stage (Grades 9 & 10):* R1, R2 and R3
- *Secondary Stage (Grade-11 & 12):* Two languages, at least one of which is native to India, to be chosen by students from the pool of language courses offered.

Note:

i. *R1 is the Language in which literacy is first learnt in school. hence, R1 should preferably be the Language most familiar to the students, which would be the mother tongue. If that is not possible because of practical considerations, e.g., diversity of mother tongues in a class/school/community/region, dearth of written resources in the language despite rich oral traditions, difficulty of developing written resources for languages spoken by relatively small populations, then it should be the State Language, i.e., Odia, which would be a familiar Language.*

i. *Since it is in R1 that literacy is first attained, it must be used as the medium of instruction (MoI) for other subjects, at least until literacy in another language is attained.*

ii. *At least two of these three Languages – R1, R2, and R3 – must be native to India.*

iii. *The State would decide the choices of R1, R2, or R3 that would be given to its students.*

iv. *If because of practical considerations, the mother tongue cannot be R1, then the most familiar local language may be used as R1.*

v. *This OCF-SE does not make any distinctions between 'languages' and 'dialects;' all variations of a language used for communication or literature in a given region are also referred to as languages.*

4.1.3 Learning Standards

The approach to language teaching and learning in schools, including the Learning Standards to be achieved, is guided by the flexible, three-language formula as laid out in NEP 2020:

In the ***Foundational Stage***, the focus is on building familiarity of students with two spoken Languages (R1 and R2). At the end of this Stage, students are expected to read fluently in R1 and comprehend what they read, and begin writing sentences in R1 to express experiences, and what they see in pictures. They gain some familiarity with reading and writing in R2.

In the ***Preparatory Stage***, students develop proficiency in speaking and competencies in reading and writing in both Languages (R1 and R2). While students achieve these faster in R1, they are expected to gain familiarity with R2, gradually progressing from basic communication skills to greater fluency and proficiency in speaking and writing.

In the ***Middle Stage,*** Teachers should aim to achieve similar levels of students' capacities in both R1 and R2. By the end of this Stage, students can understand and appreciate the distinctive features of the language, engage in collaborative discussions, debates, and presentations, analyse and interpret what they read, and write independently with appropriate structure, grammar, vocabulary, and creativity. A new third Language, R3, is introduced in this Stage. Students acquire familiarity with the spoken form of this Language, along with the basics of reading and writing. They are expected to read various simple texts with comprehension in R3 by the end of the Middle Stage.

In the ***Secondary Stage,*** up to Grade 10, the Curricular Goals in R1 and R2 are almost the same. The same level of effective communication (both oral and written) in both languages must be achieved. Students can use these languages for reasoning and argumentation and make effective presentations. Students develop linguistic proficiency for academic use in R1 and R2 by the end of this Stage. In R3, students engage with different forms and types of literature and learn to apply the basics of linguistic rules in speech and writing. A higher level of familiarity, understanding, and interpretation of literature is achieved for at least one of the Languages — R1, R2, or R3 — that is native to India.

In Grades 11 and 12, at least two languages will be studied, at least one of which is native to India, and would be chosen by students from the pool of language and literature courses that are offered. In addition to the possibility of continuing study in R1, R2, and/or R3, the choices

for languages would include Sanskrit and other modern/classical languages and literatures of India, including classical Tamil, Telugu, Kannada, Malayalam, Odia, Pali, Persian, and Prakrit. In addition to this, foreign languages, such as French, German, Japanese, and Korean would also be offered.

Curricular goals and competencies for R1, R2, and R3 for the Preparatory, Middle, and Secondary Stages have been annexed.

4.1.4 Content Selection and Pedagogy for R1, R2 and R3

General Principle of Content Selection and Teaching Strategies: It is pertinent to select content that is age-appropriate and relevant to the developmental stages of language learning of students. Teachers need to ensure the use of good quality and appropriate TLMs to enhance enthusiasm for learning. Apart from choosing appropriate content, it is required to understand how the content can be delivered in the classroom. Although the approach, principles, and methods of pedagogy have commonalities across subjects, the pedagogy for teaching language should focus on balanced approach to literacy, exposure to a variety of literature, and sustained and regular practice of listening, speaking, reading, and writing skills.

Foundational Stage (ECCE to Grade-2) R1 & R2: "Since Children learn concepts most rapidly and deeply in their home language, the primary medium of instruction would optimally be the child's home language/ mother tongue/familiar language in the foundational stage." (NCFFS-2022, Section 3.2, pp-76). At the end of foundational stage, children should develop strong oral language skills which include listening comprehension, adequate vocabulary and oral expression in at least two languages, i.e. R1 and R2. Children should be exposed to multiple oral languages for cognitive stimulation which is beneficial for the development of creativity and critical thinking. Use of real-life materials and children's literature can be more authentic for language learning. Phonological awareness, alphabet knowledge, story comprehension can foster reading skills. For development of writing skills fine motor skills, letter formation, word building can be helpful.

The use of songs, poetry, games, drama, total physical response (TPR) and other creative interaction, including narration of experiences, places, events and toys, can be used. This would enhance aesthetic and creative sensibilities among children while making language learning more fun and thereby more effective. Reading skills will first be developed in mother tongue through picture, story books, and interactive activities involving poems, rhymes, songs, drama. Writing skills can be developed through drawing, workbooks, and games requiring writing.

Preparatory Stage (Grades 3-5) R1 & R2: The principle of content selection for the preparatory stage for R1and R2 should emphasize creating diverse and engaging materials to develop oracy, reading, writing, and values. For oracy, content should include interactive activities like role plays, rhymes, songs, and interviews that encourage conversation and reduce language anxiety. For reading, materials should include stories, poems, essays, and comics, with visually appealing formats to develop interest. In writing, activities should focus on constructing simple sentences through tasks like story completion, finding suitable title for images, and creating posters and banners.

At this stage, teaching strategies will focus on developing oracy, reading comprehension, writing skills, and vocabulary for R1 and R2. Justified use of learners' R1 would enhance their R2. Oracy skills can be enhanced by having students regularly speak about their experiences, describe texts, and engage with diverse media like news, movies, and educational channels. Students would also practice responding, narrating, summarizing, discussing, and role-playing. For reading, teachers will use strategies like reading aloud, guided reading, and independent reading. In writing, students will be exposed to various writing styles, and taught drafting, with teachers providing feedback on drafts. To develop vocabulary, strategies include predicting word meanings from context, playing word games, using dictionaries, and encouraging students to incorporate new words into speech and writing.

Middle Stage (Grade 6 to 8) R1, R2 & R3: In the middle stage content selection for language learning for R1, R2 and R3 must cater to the development of functional, literary, and linguistic skills. For functional language skills, materials should be familiar to students and relevant to their daily lives. The topics like traffic jams, town planning, floods, droughts, and pollution will help learners use language in practical contexts. Literary skills can be developed by exposing students to non-fiction and fiction, from regional, national, and global writers. Linguistic skills, such as punctuation, sentence structures, and tenses, should be visible in the selected material to foster proficiency in reading, writing, and speaking. Additionally, content should reflect the multilingual nature of the country, incorporating local and regional language variations, and promoting the appreciation of linguistic diversity. For learning R3, focus at this stage should be on developing reading and writing skills through small stories and poems. Additionally, the content must support the development of functional language skills in R3, including basic letter writing, daily conversations, poster making, and invitations.

Secondary Stage (Grade 9 to 10) R1, R2 & R3: The principles of content selection for R1, R2 and R3 follow the same principles mentioned for the Middle Stage. However, at this stage, students must be taught to enjoy the beauty of literature in greater depth and breadth. The level of sophistication of content chosen can include both simple and complex learning materials which would promote linguistic proficiency for academic use in R3.

The strategies for teaching at this stage will focus on developing oral presentation, reading, and writing skills. Students should have opportunities to share ideas and listen to others through methods like role play, group discussions, debates, and interviews. Reading skills should emphasize literary language, critical reading, and exposure to multilingual texts. The degree of complexity of literary texts of R3 may be high but the essential linguistic and literary skills developed will aim at matching those of R1 and R2 as far as possible.

4.1.5 Pedagogy

The four basic language skills i.e. Listening, Speaking, Reading and Writing formulate the foundation of language learning. For the development of listening skills, a teacher needs to focus on predictive listening, inferential listening, intensive listening, listening for pleasure etc. Appropriacy, accuracy, fluency, clarity, pronunciation, lucidity, which are the components of oral language skills, must be focused in all stages of language learning.

Reading is a highly complex and active skill which communicates between the reader and

writer. Reading aloud, shared reading, guided reading and independent reading should be focused by the teacher to enhance reading skill. The sub-skills of reading like predicting, inferring, classifying, comparing need to be emphasized during reading. Writing skill will be developed in all stages through guided writing followed by more independent writing of words, phrases and then complete sentences in meaningful and creative contexts.

For development of language skills, ICT can be integrated. Various softwares, apps, audio books, videos, podcasts, open online courses have eased language learning. Online dictionary, translation app and AI can be very helpful while teaching a language class. Softwares like text to speech, speech to text can be helpful for students with dyslexia. For the development of language learning, home plays a vital role. Children naturally learn their mother tongue through daily interactions with family members, helping them develop vocabulary, pronunciation, and communication skills even before formal schooling begins. A strong foundation in the home language enhances cognitive development and makes it easier for children to learn additional languages in school. Parents and caregivers contribute by engaging in conversations, storytelling, and reading activities, which strengthen language comprehension and literacy skills. Encouraging a language-rich environment at home further supports school learning. Home acts as a bridge between traditional oral knowledge and formal education, helping children develop literacy in multiple languages and preserves the linguistic diversity of the state.

4.1.6 Assessment in Languages

Students should be assessed on their fluency and proficiency in the language, their ability to communicate effectively, and their reading and writing skills in various forms, such as picture descriptions, stories, essays, literary descriptions, and research papers. Assessments should include reading comprehension of both familiar and unseen passages, as well as writing essays, letters, posters, and creative pieces. Additionally, students should be evaluated on oral communication through class discussions, debates, role plays, and other presentations. The criteria for assessing oracy and literacy competencies should be adapted based on the task but generally focus on key areas. For oracy, teachers should evaluate task relevance, the clarity and logic of arguments, grammatical accuracy, confidence in speaking, and vocabulary usage. Assessment of literacy includes skills in reading, writing, comprehension, and vocabulary. For example, when assessing Grade 5 students' writing skill, the focus should be on story length, coherence, sentence structure, vocabulary, grammar, and punctuation. For Grade 7 students, criteria should include the number of questions answered, identifying new words, framing sentences, stanza descriptions, and use of appropriate vocabulary. These criteria should be developed according to the students' level and the nature of the task. Various tools like written tests, oral exams, quizzes, essays, project work, portfolios can be helpful to assess the language learning of students. Self-assessment, Peer assessment, Group assessment can be used as means for assessment which can foster team spirit, critical thinking and creativity.

Key Takeaways

1. Curriculum/ syllabus /text-book developers for language subject need to focus on cultural sensitivity, inclusiveness, sustained engagement of learners, and local context in the selection of contents, illustrations, and strategies for teaching and assessment.
2. The schools will celebrate language related events like, book fairs, reading weeks or language days; establish reading corners in every classroom; publish school level newsletters, children's magazine, story books, etc.
3. Various activities like, *role play, story-telling, poem, mantra recitation, debate, prarthana, janana, wall magazine* in local and other languages should be encouraged in every school for awareness of the diversity of languages.
4. Stories, lullaby, and poems in local languages, which enrich the linguistic heritage of Odisha need to be preserved through practice and involvement of local community.
5. Mini museums, displaying local collection of materials, can be established at gram panchayat /school level.
6. Documentation of folktales, and folksongs need to be made at the school/ panchayat/ district/ regional level, and can be shared.

Section 4.2

Mathematics Education

Mathematics is the art and science of discovering patterns and explaining them. These patterns are all around us, in nature, in technology, and in the motion of the Earth, Sun, Moon, and Stars. It is the language of logic, reasoning, and problem-solving. It is an essential tool for critical thinking, analytical skills, and creativity. Mathematics education plays a vital role in shaping the minds of future generations, enabling them to navigate the complexities of the modern world. It lays the foundation for future careers in science, technology, engineering, and mathematics (STEM). By emphasizing conceptual understanding, procedural fluency, and real-world applications, mathematics education can inspire students to become active learners, innovators, and problem-solvers.

By aligning mathematics education with the vision of NEP 2020, we can create a more inclusive, effective, and engaging mathematics education system that prepares students for success in an increasingly complex and interconnected world. Mathematics possesses timeless and absolute truths, established through logical reasoning and proof. Mathematical knowledge is cumulative, building on previous truths, and involves finding patterns, making conjectures, and verifying or refuting them. This process requires creativity, aesthetics, and elegance. Mathematical knowledge not only helps students develop arithmetic skills but also plays a crucial role in understanding concepts in other school subjects, such as Science and Social Science, and even Art, Physical Education, and Vocational Education. Learning Mathematics can also contribute to the development of capacities for making informed choices and decisions.

4.2.1 Aims of Mathematics Education

Mathematics has an important role to play in achieving the overall Aims of School Education. The specific aims of Mathematics Education are as follows:

Basic Numeracy: Numbers and quantities play a very important role in day-to-day interactions within a complex society. Mathematics Education in schools should ensure that all students are fluent in basic numeracy. This would include not just fluency in numbers and number operations using Indian numerals, but also the capacities to handle situations that involve space and measurement.

Mathematical Thinking: Mathematical thinking involves systematic and logical ways to think about and interpret the world. The capacities for identifying patterns, explaining patterns, quantifying and measuring, using deductive reasoning, working with abstractions, and communicating clearly and precisely are some illustrations of mathematical thinking. Mathematics Education in schools should aim for developing such mathematical thinking in all students.

Problem Solving: The capacity to formulate well-defined problems that can be solved through mathematical thinking is an important aspect of learning Mathematics. Mathematics Education in schools should aim for developing such problem-solving capacities in all students. Problem

solving also develops the capacities of perseverance, curiosity, confidence, and rigour.

Mathematical Intuition: Focusing on the common themes and patterns of reasoning across mathematical areas, guessing correct answers before working out precise answers, and engaging in informal argumentation before carrying out rigorous proofs are all effective ways of developing mathematical intuition in students. Developing such mathematical intuition in all students should be one of the aims of Mathematics Education in schools.

Joy, curiosity, and wonder: Discovering, understanding, and appreciating patterns and other mathematical concepts, ideas, and models can require great creativity and often generates great wonder and joy. Mathematics Education in schools should nurture this sense of joy, curiosity, aesthetics, creativity, and wonder in all students.

4.2.2 Status in Odisha and Current Challenges

In Odisha, at the pre-school level, mathematics has been taught not as a subject but has been integrated through play-based activities. It implements foundational literacy and numeracy as per NCERT's NIPUN Bharat guidelines upto Grade 2. Mathematics is not taught as a separate subject till Grade 1. In Grade 1, mathematics is taught as a part of *Hasa Khela*, an integrated textbook for Mathematics, EVS and Language with focus on foundational numeracy. Students are provided with workbook known as, Foundational Learning (Numeracy). From Grade 2 onwards, mathematics is taught as a core subject. In Grades 11 and 12, mathematics is an optional subject. Currently, a large proportion of students in the early grades are not achieving Foundational Literacy and Numeracy. This makes it difficult for students to achieve any further higher learning in Mathematics. Many students in the current system have developed a fear of Mathematics. Traditional mathematics learning has been more mechanical, overly focused on procedural steps, neglecting the creative and aesthetic aspects of mathematics. Our school curricula often fail to connect mathematical concepts to students' everyday experiences, making learning less relatable and engaging, and hindering effective understanding. Traditional assessment methods in mathematics have promoted rote learning, reinforcing the misconception that math is merely mechanical and computational, rather than a creative and problem-solving discipline.

4.2.3 Learning Standards

In the *Foundational Stage*, attaining foundational numeracy represents the key focus of mathematics. Foundational numeracy includes understanding Indian numerals, adding and subtracting with Indian numerals, developing a sense of basic shapes and measurement using non-standard tools, and early mathematical thinking through play.

In the *Preparatory Stage*, while the focus is on to work on building conceptual understanding of numbers, operations (all four basic operations), shapes and spatial sense, measurement (standard tools and units) and data handling, the objective is to develop capacities in procedural fluency, and mathematical and computational thinking to solve problems from daily life.

In the *Middle Stage*, the emphasis moves towards abstracting some of the concepts learned in the Preparatory Stage to make them widely applicable. Algebra, in particular, is introduced at

this stage via which students are able to, for example, form rules to understand, extend, and generalise patterns. More abstract geometric ideas are also introduced at this Stage and relations with algebra are explored to solve problems and puzzles.

The *Secondary Stage* focusses on further developing the ability to justify claims and arguments through logical reasoning. Students become comfortable in working with abstractions and other core techniques of mathematics and computational thinking, such as the mathematical modelling of phenomena and the development of algorithms to solve problems.

Across the Stages, students develop mathematical skills such as problem solving, visualisation, optimisation, representation, and communication, thereby developing the capacities of Mathematics and Computational Thinking. Through creating and solving puzzles, pictorials, word problems, and optimisation problems, various values and dispositions, such as, perseverance, curiosity, confidence, rigour, and honesty would be developed across grades. The detailed Curricular goals and Competencies are given in Annexture.

4.2.4 Content Selection and Organization

The following principles will be followed while choosing topics of study for Mathematics classrooms. Although stage-wise principles are laid down, principles for the previous Stage have also been considered, wherever applicable.

At the *Foundational Stage*, content in mathematics can reflect engagement with the local environment. Mathematical activities, whether understanding shapes or counting, can be integrated with the natural and human environments. The content in textbooks and workbooks should be designed in such a way that these will be complemented with appropriate manipulatives in the classroom. In textbooks, incorporate games, puzzles, and activities that promote mathematical thinking (play-based learning). Use manipulatives, diagrams, and real-world examples to introduce mathematical concepts (concrete-representational-abstract (CRA) approach). Use narratives and everyday situations to make mathematics meaningful and relatable (storytelling and contextualization). Incorporate images, diagrams, and charts to support understanding and visualization (visual learning).

At the *Preparatory Stage*, mathematical concepts should be developed using students' local context, incorporating case studies, daily life situations, and home language vocabulary which will help children for deeper understanding. The focus should be on activities that are engaging and built around the daily-life experiences of students. It should cater to more than one learning objective/ competency simultaneously and take into account one or more learning areas at the same time. The development of a culture of learning outside the classroom should be encouraged. Mathematics content should use simple language to facilitate student understanding and expression of thoughts. Gradually, this helps students develop precise mathematical vocabulary, symbols, and notation. Mathematical concepts will gradually progress in a logical and sequential manner. Emphasis should be laid on problem-solving by encouraging students to apply mathematical concepts to solve problems.

At the *Middle Stage*, content should allow students to explore several strategies for solving a problem or puzzle. It should involve situations and problems that offer multiple correct

answers. For this, open-ended questions should be given more space in the exercises. Content should provide opportunities for students to 'talk' mathematics. Semi-formal language used by students in discussions should be accepted and encouraged. Problem posing is an important part of doing mathematics. Exercises that require students to formulate and create a variety of problems and puzzles for their peers and others should be encouraged. Content should allow students to explore, create, appreciate, and understand instead of just memorising concepts and algorithms without understanding the rationale behind how they work. It should offer meaningful practice, through worksheets, games, puzzles, that leads to working memory (*smriti*) and ultimately builds procedural or computational fluency. Mathematics should emerge as a subject of exploration, discovery, and creativity rather than a set of mechanical procedures. Content should give opportunities to naturally motivate the usefulness of abstraction. Students should be encouraged to think abstractly and make connections between concepts by means of introduction to abstract thinking.

At the *Secondary Stage*, content should be chosen and designed in a way that enables students to understand notions of abstraction, the axiomatic system, and deductive logic. More project-based work should be designed and given space in the content so that students have opportunities to weave together several concepts simultaneously. This will help students appreciate the unity and inter-relatedness of mathematical concepts. Interdisciplinary approaches should be considered while designing the content. Project-based work could be designed based on themes to ensure the integration of other subjects, e.g., linear variation and equation solving in the Science and Social Science. Content at this stage should allow students to develop and consolidate the mathematical knowledge and skills acquired during the Middle Stage. Students should develop necessary skills to work with tools, modern technological devices, and mathematical software useful in mathematical discovery and learning. Content should highlight the history of Mathematics and how mathematical concepts have developed over time and, in particular, the contributions of Indian and other mathematicians. Emphasis on mathematical modeling may be given by encouraging students to apply mathematical concepts to real-world problems.

4.2.5 Pedagogy

Traditional approaches to teaching mathematics of directly jumping into abstract symbolic manipulation is not very effective in making mathematics accessible to all the learners. There are several steps before the learner is ready for symbolic manipulations. First, the child should have concrete experiences that embody the mathematical concept involved. Once the learners have immersed themselves in this experience, discussing this experience using language is the next level of abstraction. This language use can then be represented as pictures or diagrams. Finally, these pictures can be converted into symbols that are used in Mathematics to represent that particular concept or idea. Effective Mathematics pedagogy should take into consideration this sequence for developing a conceptual understanding of mathematics.

For students, problem-solving and problem-posing are critical steps in learning Mathematics. Practice with understanding and independent problem-solving helps students understand difficult concepts. They should also be encouraged to pose questions and come up with new

problems. Many students from the Preparatory Stage onwards enjoy learning via scientific experiments performed in laboratories. It is possible to show this 'experimental' nature of Mathematics using an inductive method of teaching at the Preparatory, Middle, and Secondary Stages. The idea is to develop teaching materials consisting of appropriate Mathematics experiments. Students will also be given many opportunities for critical thinking, in the form of interrogating definitions, formulating/choosing alternative proofs, conjectures, explanations, representations, or generalizations. Students should be exposed to multifaceted learning through representations of mathematics concept by visual, symbolic, and linguistic approaches. The teachers can leverage various technological tools, such as physical models, graphing calculators, simulations and games to help students visualize concepts, and develop problem-solving strategies. Collaborative Learning may be encouraged through Small-group work and shared understanding with short-duration sessions, allowing students to collaborate, ask questions and build on each other's strengths. Some of the suggested methods of teaching are: Play-way (activity-based) method, Inquiry-based method, Problem-solving method, and Inductive-Deductive method. Mathematics learning can be made more meaningful and interesting by integrating it with other curricular areas like, Art and Craft, Sports and Science.

Home plays a crucial role in supporting mathematics education at all stages. Regular practice at home helps reinforce mathematical concepts learned in school. Parents can provide access to mathematical resources, such as textbooks, online materials, and educational games. The parents also use the household materials like different utensils for conceiving the idea of different geometrical shapes. Regular communication between parents and teachers helps identify areas where children need extra support. Parents can help connect mathematical concepts to real-life situations, making math more meaningful and interesting. Parents can help alleviate math anxiety by promoting a growth mindset and encouraging children to view challenges as opportunities for growth.

4.2.6 Assessment in Mathematics

Students must be assessed for understanding of concepts and mathematical skills and capacities, such as procedural fluency, computational thinking, problem solving, visualisation, optimisation, representation, and communication. They must be assessed through a variety of ways, e.g., solving a variety of problems testing procedural knowledge and conceptual understanding in key mathematical concepts, geometric reasoning, algebraic thinking, word problems, and working in groups to solve mathematical problems. Inclusive assessment practices using adaptive assessment tools must be adopted to cater to the needs of children with disabilities. Open book assessments can go a long way towards reducing anxiety in students. Examinations could provide 'fact sheets' consisting of information, such as formulae, and definitions, so that students need not memorise them but use them in actual problem solving.

Key Takeaways

1. Ensure that the mathematics textbook is culturally relevant and sensitive. Incorporate mathematical examples and images that reflect diverse backgrounds and abilities.

2. Ensure the availability of appropriate and adequate LTMs, manipulatives, puzzles, riddles, Mathematics kits, etc. in schools.
3. Mathematics learning can be made more meaningful and interesting by integrating it with other curricular areas like, Art and Craft, Sports and Science.
4. Play-way (activity-based) method, Inquiry-based method, Problem-solving method, Problem-posing method and Inductive-Deductive method must be adopted.
5. Parents can help children to connect mathematical concepts to real-life situations, making math more meaningful and interesting.
6. Children must be assessed through a variety of ways – problems solving, testing procedural knowledge and conceptual understanding, geometric reasoning, algebraic thinking, word problems, group work, inclusive assessment, use of ICT, adaptive assessment tools and different mathematics apps, and open book assessment.

Section 4.3
Science Education

Science is the study of the natural and physical world around us through a systematic process of observing, questioning, forming hypotheses, testing hypotheses through experiment, analysing evidence, and thereby continuously revising our knowledge. The process of Science is not something that only scientists do in laboratories alone. It also develops an important set of capacities and dispositions essential for leading rational and fulfilling lives. Learning Science enables us to gain valid knowledge about the world as well as acquire scientific values, capacities, and dispositions, such as inquiry, curiosity, creativity, critical thinking, problem-solving, evidence-based thinking, and sound decision-making engaging with an ever-evolving technological and global landscape.

As a subject in schools, Science draws significantly from the disciplines of Biology, Chemistry, Physics, Earth Science, as well as from Mathematics, Computational Sciences, and, where relevant, from Social Sciences and Vocational Education, in order to provide an interdisciplinary understanding and appreciation of the role of science in everyday life.

In the context of Odisha, with its rich cultural heritage, biodiversity, and socio-economic diversity, science education must be deeply contextualized integrating traditional knowledge systems, local environmental issues, and indigenous practices such as sustainable agriculture, water conservation, and tribal medicinal wisdom. Aligning with NEP 2020 and NCF-SE 2023, the school curriculum in Odisha should emphasize experiential learning, interdisciplinary integration, and digital literacy, while embedding emerging technologies like AI, virtual labs, and computational modeling to enhance learning and real-world application. Science must be seen as both a historical and creative endeavor, shaped by landmark discoveries and driven by innovation, imagination, and continuous refinement. By connecting scientific knowledge with societal needs, ethical concerns, and sustainable development goals, students can explore solutions to challenges such as climate change, disaster preparedness, healthcare, and renewable energy within their own communities. A learner-centered, inclusive, and hands-on approach, grounded in the scientific method and supported by evidence-based thinking, can empower students in Odisha to become ethical innovators, informed citizens, and adaptive problem-solvers who contribute meaningfully to a just, sustainable, and technologically advanced future.

Science learning in the state should not just focus on textbook knowledge but also empower students to connect theory with practice by exploring local biodiversity, studying indigenous medicinal plants, and understanding climate resilience strategies employed by Odisha's coastal communities. A unique feature of Odisha's science education should be its deep connection with indigenous knowledge systems. Traditional water conservation techniques such as 'Dohas' and 'Katas', the use of ethnobotanical knowledge in healthcare, and eco-friendly agricultural practices like 'Chakada' farming offer rich learning opportunities. Encouraging students to document, analyze, and innovate upon these local practices fosters scientific inquiry

while preserving Odisha's cultural heritage.

Odisha, with its legacy of technological ingenuity, from the ancient metallurgical expertise seen in the *Dhauli Ashokan Pillar* to modern climate adaptation strategies in coastal regions, provides an ideal environment for students to engage in real-world problem-solving. Odisha's unique geographical and ecological diversity, from the Similipal Biosphere to the Chilika Lake ecosystem, can serve as a living laboratory for students to conduct field research and develop solutions for local and global challenges.

4.3.1 Current Status of Science Education in Odisha

In Odisha, at pre-school level, science has been taught not as a subject but has been integrated through play-based activities. Science is not taught as a separate subject till Grade 5. Science is taught as a part of *Hasa Khela* in Grade 1, *Hasa Khusi* in Grade 2, and *Jana Ajana* in Grade 3. *Hasa Khela* is an integrated textbooks for Mathematics, EVS and Language. *Hasa Khusi* is an integrated textbooks for EVS and Language. *Jana Ajana* in Grade 3 is a textbook on EVS. In Grades 4 and 5, science is taught through the textbooks EVS (*Ame o Ama Paribesh* for Grade 4 and *Paribesh Vigyan* for Grade 5). From Grade 6 onwards, science is taught as a core subject.

Science education in Odisha is supported by several existing resources that, if effectively utilized, can enhance learning outcomes and student engagement. Many Secondary Schools are equipped with science laboratories, basic apparatus, and science kits intended to support practical and hands-on learning. Initiatives like the SWAYAM package developed by OSEPA aim to promote activity-based science education at the middle level. Additionally, the curriculum includes opportunities for practical work, demonstrations, and integration of environmental and health education. However, despite the availability of these resources, several persistent challenges continue to hinder effective science education in the state. The use of science labs and kits in actual classroom practices is limited, with many teachers relying heavily on textbook-based instruction that emphasizes memorization over inquiry and understanding. The SWAYAM package, though well-designed, is rarely used at the school level. Science teaching often lacks hands-on activities, demonstrations, or field visits that could make learning science more engaging and relevant. There is also minimal effort to connect scientific concepts with local examples or indigenous knowledge systems, making science feel disconnected from students' everyday experiences. Furthermore, many schools, especially in rural areas, face shortage of dedicated science teachers and lack ongoing professional development focused on experiential pedagogy. Traditional assessment methods continue to prioritize rote learning, discouraging the development of critical thinking and analytical skills. To bridge this gap, there is a need for systemic efforts to train teachers in activity-based and inquiry-driven approaches.

4.3.2 Content Selection and Organization

The content of science should engage students meaningfully by connecting concepts to their real-world observations and experiences. Since scientific ideas are inherently abstract, content must be designed to facilitate inquiry, allowing students to actively explore and construct meanings rather than passively memorize facts. Concepts should be introduced progressively,

from simple to complex, and encourage students to make connections between disciplines and stages of learning. Scientific inquiry should be a central focus, with content enabling hands-on exploration, experimentation, and application of reasoning skills. Content must also offer opportunities for extended inquiry, allowing students to engage in long-term projects and independent investigations beyond the classroom.

Furthermore, Science education should cater to diverse learning needs, using various materials and technologies to make learning accessible to all students, including those with disabilities. The language of science, including diagrammatic, mathematical, and abstract representations, should be developed systematically. Additionally, Science content should prepare students to make informed decisions as responsible citizens, fostering scientific values such as integrity, objectivity, and openness to uncertainty. By integrating concepts across disciplines, students can better understand the interconnectedness of scientific ideas, making learning more relevant and meaningful. Inclusivity is central, with attention to gender, cultural diversity, and the needs of all learners, while sustainability and environmental awareness are woven into the science curriculum.

Science education at the *Foundational Stage* should connect with children's everyday experiences, environment, and culture, making learning meaningful and engaging. Concepts should be introduced through familiar objects, local activities, and natural phenomena.

As students progress to the *Preparatory Stage,* learning should encourage exploration, observation, and inquiry, integrating traditional knowledge, festivals, and folk stories.

Science education at the *Middle Stage*, should emphasize experiential and inquiry-based learning that nurtures curiosity, creativity, and critical thinking. The curriculum encourages hands-on activities, experiments, field visits, and real-life applications to make science meaningful and contextually relevant. A thematic and concept-driven approach is recommended, focusing on key areas such as "Matter and Materials," "Life and Living," and "Earth and Environment," while promoting scientific processes like observing, hypothesizing, experimenting, and analyzing. Emphasis should be given on use of ICT tools, virtual labs, and simulations alongside traditional knowledge systems to enrich learning experiences. Science education at this stage also incorporates vocational elements and life skills, ensuring learners are prepared for real-world challenges and future opportunities.

At the *Secondary Stage*, science should become application-oriented and technology-driven, focusing on innovation, research, and real-world problem-solving.

Scientific inquiry should progress across stages. Basic concepts introduced in primary classes should be revisited with increasing depth. The foundational stage should focus on curiosity and hands-on exploration, the preparatory stage on inquiry-driven learning, the middle stage on logical reasoning and experimentation, and the secondary stage on advanced inquiry and interdisciplinary learning.

4.3.3 Pedagogy

With rapid advancements in artificial intelligence, data science, and digital tools, Odisha's science education must evolve beyond traditional methods to embrace innovation, inquiry-

based learning, and problem-solving. The integration of virtual labs, augmented reality (AR), and AI-powered personalized learning can bridge resource gaps, making scientific exploration more interactive and accessible, especially in remote and tribal-dominated regions of the state. By blending tradition with technology, science education in Odisha can nurture learners fostering innovation, and embedding ethical and environmental consciousness.

Science pedagogy across stages must be guided by key principles that ensure meaningful learning. Learning Science requires active engagement with the environment, achieved through scientific processes such as questioning, hypothesizing, observing, testing, analyzing, and communicating findings. It involves varied learning settings, including the classroom, the field, and the laboratory, using inquiry-based, discovery, and hands-on approaches to sustain curiosity of children. It must emphasize communication and collaboration, encouraging students to engage in scientific discussions in their local languages while simultaneously developing proficiency in scientific terminology. As students progress, their capacity to engage with complex and abstract ideas must be nurtured by building on prior knowledge and employing multiple representations such as mathematical, graphical, and diagrammatic models. A holistic, multidisciplinary approach should be emphasized by connecting classroom learning with real-world applications, integrating Science with Mathematics, Social Sciences, and indigenous knowledge systems.

The choice of pedagogical approaches and setting should be guided by the nature of the concept and needs of learners ensuring alignment with learning outcomes and competencies. Every approach and setting should be incorporated at least once in an academic year to provide diverse learning experiences. Even in a didactic approach, teachers should highlight aspects that students could have explored through inquiry. Hands-on activities play a crucial role in experiential learning, allowing students to engage with materials, conduct experiments, and manipulate scientific instruments to build understanding. The discovery approach encourages students to explore natural phenomena independently, leading them to recognize patterns and develop connections between observations and scientific concepts. For example, students may study the behavior of migratory birds in *Chilika* lake to understand ecological balance or observe the impact of deforestation in *Similipal* to explore environmental conservation.

Inquiry-based learning further enhances students' ability to think like scientists by systematically observing, experimenting, inferring, and communicating their findings. A project-based approach extends learning beyond the classroom, allowing students to engage with their local environment such as, tracking the seasonal changes in water levels of the Mahanadi River or studying the impact of cyclones on the coastal regions of Odisha. The didactic approach remains essential for structured explanations of scientific concepts after students have explored initial ideas. Demonstrations, where teachers illustrate experiments or instrument operations, serve to reinforce conceptual understanding.

A combination of these pedagogical approaches and learning settings ensures an enriched, holistic Science education experience. For instance, in Grade 9, learning about osmosis in living cells may begin with familiar real-life examples, such as the traditional method of salt preservation of fish in coastal Odisha, before progressing to hands-on experimentation with onion cells under a microscope. Students conduct observations, record their findings, and

discuss their inferences, leading to a deeper understanding of the process. This integrated approach, combining demonstration, hands-on learning, and discussion, ensures a comprehensive and engaging Science learning experience. By contextualizing Science education to Odisha's socio-cultural and ecological realities, students can develop a deeper connection with their environment and contribute meaningfully to the state's scientific and technological progress.

High-quality LTMs and textbooks ensuring a competency-based and inquiry-driven approach must be used. Visual aids, infographics, and QR codes linking to videos and simulations should enhance interactivity. Accessibility features such as large print, audio descriptions, and tactile diagrams should be incorporated for diverse learners. Teachers must be actively involved in material development to ensure usability, and regular updates should keep resources relevant to scientific advancements.

The home environment is vital in nurturing scientific curiosity and critical thinking in children. Parents and community members can foster inquiry by encouraging questions about everyday phenomena and facilitating simple experiments using household items. Daily activities like cooking, measuring, and weather observation can serve as practical science lessons. A reading culture with access to science books and digital resources enhances learning, while do-it-yourself (DIY) projects and model-making stimulate creativity. Schools should engage parents through workshops, guiding them on integrating science into everyday life to create a supportive learning atmosphere at home.

4.3.4 Assessment

Assessment should move beyond rote memorization, incorporating formative techniques like open-ended questions and science journals. It should be integrated, ensuring that students' scientific competencies are observed and recorded explicitly. Contextualized, performance-based and inclusive assessment techniques bridge the gap between textbook knowledge and everyday life, making learning more meaningful. The emphasis on process-oriented evaluation ensures that students are not just passive learners but active participants in scientific exploration. Ultimately, effective assessment should cultivate curiosity, problem-solving abilities, and a scientific temperament, preparing students to think critically and apply their knowledge in novel situations.

Assessment should be stage-appropriate. The foundational stage should use holistic, informal evaluation. The preparatory stage should emphasize activity-based assessments, while the middle stage should focus on structured investigations. The secondary stage should measure deep conceptual understanding, data analysis, and independent research skills.

Key Takeaways

1. Contents of science must be designed to facilitate scientific enquiry, critical thinking and problem-solving skills.

2. Science learning should go beyond textbook knowledge to empower students to connect theory with practice by exploring local biodiversity, studying indigenous medicinal plants, and understanding climate resilience strategies.
3. Contextualized, performance-based and inclusive assessment techniques bridge the gap between textbook knowledge and everyday life, making learning more meaningful.
4. Systemic efforts will be made to train teachers in activity-based and inquiry-driven approaches ensuring effective use of available resources.
5. Science labs must be established in every school at secondary level.

Section 4.4
Social Science Education

Social Science is the scientific study of human behavior, growth, development, relationships, resource utilization and the organizational structures of the environment in which individuals live. It includes the subjects of study like Geography, History, Economics, Political Science, Cultural Studies, Sociology, Psychology and Anthropology. These subjects help children enhance the quality of analyzing the world and environment which allows them to comprehend how the world and its societies have evolved, the significant events that have happened in the past, and the enduring ideas of famous persons that had impacted people's life both locally and globally. It incorporates knowledge from various fields including the humanities and serves as a foundation for social development, transforming individuals into effective citizens. As a progressive subject, Social Science evolves with changing times, continuously incorporating new knowledge, perspectives and methodologies. It adapts to contemporary issues and societal transformations, making learning relevant and dynamic.

Social Science as a branch of the Humanities focuses on the qualitative study of human society, culture, and actions, both past and present. It aims to help students understand human interactions and expressions through language, art, traditions, and connect them to their origins and culture. Social Science education fosters cultural and national pride while encouraging continuous personal and societal improvement (NCF-SE 2023). The purpose of Social Science Education is to help students learn about the society in which they live – how members of their society live, interact, behave, eat, speak, express themselves through art, the traditions they follow, the clothes they wear, and their aspirations. It also helps students in understanding their origins, their ancestors, their culture, their neighbors, and consequently, themselves. Social Science Education introduces students to people whom they have never met, places that they have never been, stories that they have never heard, and new ideas that that they have never conceived, thereby expanding their horizons and opening their minds to new possibilities. Social Science Education helps students develop pride in their culture and their country, with a forward-looking spirit to continuously improve as individuals, as a society, and as a nation.

4.4.1 Status of Social Science in Odisha Context

Social science education plays a vital role in nurturing critical thinking, ethical reasoning, and an informed understanding of societal structures. In a culturally rich and diverse state like Odisha, with its significant tribal population and varied regional challenges, a localized approach to curriculum design is essential emphasizing local history, indigenous knowledge systems, cultural practices, and regional socio-economic realities and ensuring that learners see themselves reflected in what they study. NEP 2020 has given focus on research-driven learning in social sciences to address contemporary regional challenges. It plays a central role in preparing students for an evolving world aligned with the NEP's focus on holistic education.

Social Science education in the state also faces several challenges, e.g., overemphasis on

memorization, rigid disciplinary boundaries and lack of real-world relevance that hinder its effectiveness. Some contents in some books including textbook sometimes contain information not based on verified evidence resulting in biased interpretations (NCF-SE, Section 5.3, Page: 324).

Odisha also faces similar challenges to provide the scope for experiential learning due to insufficient resource facilities and inadequate assessment tools. Curriculum reform, investment in teacher training, development of relevant instructional and assessment and conducive learning environment can minimize the challenges to some extent.

Addressing these issues calls for context-sensitive curriculum reforms, robust teacher capacity-building programs, development of locally relevant pedagogical tools, and creation of inclusive learning spaces. Integrating field-based projects, oral histories, community engagement, and use of local materials can transform social science classrooms into vibrant spaces for critical inquiry and democratic learning. When rooted in local realities yet forward-looking in approach, social science education in Odisha can become a powerful driver of change aligned with the educational goals of NEP 2020.

4.4.2 Aims of Social Science Education

Social Science Education in schools must aim to:

i. develop understanding of how societies function through the interplay of historical, geographical, social, cultural, economic, political, environmental, and other factors.

ii. develop capacities for carrying out and applying the methods of inquiry available in Social Science, e.g., verifying and cross-validating evidence, forming informed opinions, demonstrating logical decision making, collecting, organising, analysing, and representing data.

4.4.3 Learning Standards

Social Science as a separate subject begins at the Middle Stage. It builds on the capacities built in the Preparatory Stage, through the study of the subject "The World Around Us". In the Middle Stage (Grades 6-8), it develops understanding and capacities of observation, data collection and of social life in an integrated manner. In the Secondary Stage (Grades 9-10), students formally enter the disciplinary domains of History, Geography, Economics, and Political Science. In Grades 11 and 12, students get adequate exposure to Social Science as a discipline and with an understanding that they can make choices about pursuing Social Science as a specialization.

4.4.4 Content Selection and Organization

While selecting and organizing the contents in Social Science, several considerations must be taken into account. The content should aim at the attainment of curricular goals and socio-cultural context of the state. It must also take into consideration the content load and current challenges in teaching and learning. Emphasis should be laid on incorporating real-life experiences from local to state, national to global contexts, allowing learners to connect with

their immediate surroundings as well as broader global realities. The content should foster critical thinking by developing students' abilities to analyze, interpret evidence, and make informed decisions, while also promoting values and ethical understanding. The curriculum should be deeply rooted in India's rich heritage embedded in Odisha. Moreover, it should integrate Odisha's traditional knowledge systems, reflecting the cultural heritage and everyday life of its people, thereby making learning more contextual and meaningful.

The themes should span from local to regional to country and then to the world. As suggested in the NCF-SE, 2023, inclusion of 20% content for the local level; 30% content, each for the regional and national level; and 20% content for the global level would guide the selection of content for Social Science curriculum in Odisha (Section 5.4.4.4, pp. 335-336).

4.4.4.1 Inclusion of Contents in the Middle Stage (Grades 6-8)

The Middle Stage follows a 'theme-based approach', with broad themes serving as the foundation for learning, derived from multiple disciplinary perspectives. Every theme must be studied at local, regional, national, and global levels, enhancing students' ability to make connections between different scales of social phenomena. Teaching-learning materials, pedagogy and assessment must align with this interdisciplinary, inquiry-based approach, measuring conceptual understanding, and analytical thinking.

Socio-economic Aspects of Human Life: Understanding how individuals in Odisha choose different economic activities based on personal skills and interests rather than societal factors like sex, culture, caste, or race iss important. For example, both men and women in rural Odisha may engage in farming, while urban areas could see individuals engaged in crafts or local businesses, regardless of their gender or caste background.

Geo-political Changes and their Impact: The contents should include the historical story of the 26 *Gadajata* states in Odisha, including Mayurbhanj, Keonjhar, and Sundargarh, and how power shifts and policies impacted these regions both at the state and national levels. This includes the integration of princely states into modern Odisha post-independence.

Harmony and Conflict among Social Groups: The dynamics between different social groups in Odisha, addressing symbiotic relationship between tribal and non-tribal societies should be focused.

Geographical Tag Products of Local Interest: Exploring products with geographical significance such as Konark Stone Carving, Similipal cultural bio-diversity, Pipli appliqué work, silver filigree *(tarakasi),* Rasagola showcasing the rich cultural and artisanal heritage of Odisha should be included.

Topographical Diversity and Biodiversity: Emphais may be placed on Odisha's geographical diversity, ranging from the coastal plains, the middle mountainous and highlands region, the central plateaus, to the western uplands and major flood plains while highlighting important biodiversity regions like the Mahendra Giri hills in Gajapati district, which was declared a Biodiversity Heritage Site in 2022.

Disaster Management: Disaster management topics at the school level should include essential subjects such as first aid training, understanding natural hazards (cyclones, floods,

earthquakes), emergency preparedness plans, the role of government and community response, and the importance of sustainable practices in reducing disaster risks, and promoting safety within the school and the broader community.

Inclusion of disaster management in the geography is essential, especially for students in cyclone-prone regions like Odisha. By studying events such as the 1999 super cyclone, Cyclone Phailin (2013), and Cyclone Fani (2019), students can learn about the challenges and critical aspects of disaster preparedness, including early warning systems, evacuation plans, and community-based responses. Odisha's strategies, like cyclone shelters and improved coastal infrastructure, provide valuable lessons. This approach helps students understand the importance of disaster risk reduction and the role of geographic knowledge in creating a safer and more prepared society.

Cultural Heritage and Traditions: Attention should be drawn to the diverse cultural heritage of Odisha, including the inclusive religious festivals like *Rath Yatra* and *Durga Puja*, classical dance forms like *Odissi*, *Gotipua*, *Sambalpuri*, *Ghoda Nacha* and *Chhau*, as well as the world-renowned architecture in Puri and Konark. This also includes local cuisine, such as the famous *Rasgulla, Chhenapoda, Dalma,* and *Pakhala Bhata*. The major art and craft tradition of Odisha include bamboo art, paddy craft, coir craft, and silver work, etc.

4.4.4.2 Secondary Stage (Grades 9 & 10)

In the secondary stage, the study of Social Science covers the disciplines of History, Geography, Political Science and Economics along with other disciplines like Anthropology, Sociology, Philosophy, Psychology, Linguistic and Others.

Growth of Indigenous Ideas Across Various Fields: Students will be encouraged to explore the contributions of prominent figures like Samanta Chandra Sekhar in Astronomy and Astrology, advancements in stone carving with both red and black stones, and Odisha's famous dance forms such as *Odissi, Chhau, Gotipua, Danda,* and *Sambalpuri.* Additionally, the focus may be on Odisha's architectural masterpieces, including its distinct temple architecture and contributions to literature, agriculture, and medicine.

Historical Events and Processes: Students should take a deep dive into the Kalinga War (261 BCE) and its impact on both the region of Odisha and the broader Indian subcontinent, using various historical sources to understand the aftermath of Ashoka's conversion to Buddhism and the changes in Odisha's political landscape. Gajpati tradition can also be included in the curriculum.

Indian National Freedom Struggle: The role of Odisha's freedom fighters in the Indian struggle for independence, such as the contributions of Vir Surendra Sai, Birsa Munda, Madho Sing, Jayee Rajguru, Boxi Jagabandhu, and others would be highlighted. This would include the analysis of their movements and the strategies used to resist British colonial rule.

Conservation of Non-Renewable Resources: Discussion would take place on the responsible use and conservation of Odisha's non-renewable natural resources such as iron ore and coal. This topic would emphasize how individuals, communities, and the nation can balance

economic development with environmental sustainability, citing examples from Odisha's mining areas.

These topics not only reflect Odisha's historical and cultural richness but also its environmental and socio-economic realities. They aim to foster an understanding of Odisha's significance both within India and globally, while addressing modern concerns like sustainability and social harmony.

4.4.5 Pedagogy for Social Science

Although the approach, principles, and methods of pedagogy and assessment has commonalities across subjects, what is most essential for Social Science and Humanities has been discussed in this section. The purpose of teaching and learning is to provide scope to the learners both inside and outside of the school to attain the curricular goals comfortably by applying reasoning, critical thinking and experiential learning in their surroundings. The teaching learning process of social science needs to be more participatory, experiential and interactive in nature. The following pedagogical approaches need to be used in the classroom and beyond keeping in view the curricular goals and corresponding competencies

Project-based learning (PBL): Social Science teaching becomes more effective when students collaborate for a project or a specific task, e.g., conducting surveys and interviews, drawing a map of their classroom, investigating historical sources in their region, etc. Project-based learning in history might involve students working on a project that examines the impacts of a specific historical event, like the Indian Independence Movement.

Inquiry-based learning: Inquiry-based learning methods help students understand how social scientists generate knowledge. It can be used in geography teaching, to make students investigate questions about climate change, encouraging them to explore scientific data, historical climate patterns, and socio-economic implications.

Role plays and simulations: Role plays and simulations help students explore decision-making processes and find means for conflict resolution.

Community service and field excursions: Community service is an engaging strategy in Social Science teaching. Students may take up various projects to work to acquire first-hand experience of issues and work with people in need. Field excursions, including nature walks, heritage walks, food walks, and visits to police stations, museums, post offices, and planetariums, are also meaningful engaging strategy.

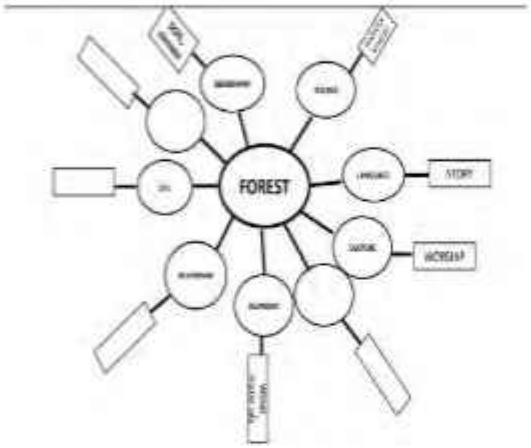
Reflective essays: Students can write reflective essays on various topics related to the curriculum. These essays can also be used by Teachers to assess the extent to which students have learnt the desired concepts and skills.

Collaborative learning: Collaborative learning might involve group discussions on current

issues like inflation or global trade, where students analyze different viewpoints and use theories to propose solutions.

Experiential learning: Experiential learning strategies such as arts-integrated strategies, story-telling strategies, can be applied, helping students connect theoretical knowledge with real-world experiences. These pedagogies enable students to apply interdisciplinary knowledge in practical ways, fostering critical thinking and problem-solving skills.

Theme-Based Learning: The NCF-SE 2023 and NEP-2020 emphasize a holistic, interdisciplinary and experiential approach to Social Science pedagogy. Both advocate theme-based learning, integrating subjects like History, Geography, and Political Science through real-world topics. This promotes critical thinking and helps students see connections across disciplines. The illustration here depicts how different concepts are connected with a major concept, making learning more contextual, interdisciplinary, meaningful and experiential.



In the heart of many Indian villages, the majestic Banyan tree stands not just as a botanical wonder, but as a silent witness to the rhythm of life and the soul of the community. A tree plays a vital role in our lives, blending nature with culture, economy, and learning. Its leaves are often used in rituals, festivals, and traditional decorations, preserving cultural practices across generations. The wood is used for making furniture, tools, and handicrafts, supporting economic activities and local livelihoods. Under its shade, stories are shared, songs are sung, and language is learned, connecting children to their roots. Scientifically, it teaches us about photosynthesis, biodiversity, and climate balance. Its beauty enhances our aesthetic sense, inspiring art and creativity. Trees offer a space for relationships to grow, where people meet, rest, and reflect. They protect the environment by purifying air, conserving water, supporting wildlife, and maintaining ecological balance. Truly, a tree is a symbol of life, learning, and sustainability.

4.4.6 Guidelines for LTMs and Textbook Developers

Textbooks should offer reliable information to help students grasp key concepts effectively, including core contents relevant to national, state, and local contexts. Learning-Teaching Materials (LTMs) should be subject-specific, cost-effective, age-appropriate and accessible for each and every child including child with special needs. Textbooks for foundational and preparatory stage should be engaging, colorful and easy for young children to handle, featuring simple language and themes related to social behavior. At the Middle Stage, textbooks should encourage analytical thinking and problem-solving. At the Secondary Stage, textbooks should address critical topics like social relationships, gender equality and responsible citizenship, balancing core knowledge with regional and national contexts. Textbooks and LTMs should be designed to meet the diverse needs of learners, ensuring high-quality, affordable, and accessible resources for all students.

4.4.7 Role of Home in Social Science Education

In the context of social science education, the home environment is foundational, with parents providing the first exposure to societal norms and historical narratives. Discussions on diversity, democracy, and ethical decision-making reinforce what is taught in schools. Schools and homes must collaborate to nurture values like empathy, equity and inclusivity.

4.4.8 Capacity-building of Teachers

Social science teaching should foster creativity, aesthetic appreciation, and critical thinking, encouraging students to connect historical events with contemporary developments. Teachers should incorporate diverse audio-visual materials to enrich the learning experiences. Specialized training programs should equip educators with pedagogical content knowledge. Teachers must adopt an interdisciplinary approach and be proficient in ICT tools as classrooms shift to virtual learning.

4.4.9 Assessment

Assessment in social science subjects at the school level plays a crucial role in evaluating students' understanding of key concepts, their ability to apply knowledge and their critical thinking skills. The assessment process in social sciences typically includes a combination of formative and summative assessments. Formative assessments, such as quizzes, class discussions, presentations and group activities, are designed to monitor ongoing student progress and provide immediate feedback. In history, for example, a formative assessment might involve students discussing the causes and consequences of the first war of independence of India in small groups, which allows teachers to gauge their understanding of historical causality. In geography, students might participate in a fieldwork project, collecting data on local land use patterns and analyzing their findings to understand the relationship between human activity and the environment. These assessments help teachers identify students' strengths and areas for improvement while allowing them to adjust their teaching methods to better meet the needs of individual students.

On the other hand, summative assessments, such as the end-of-term exams, projects, and essays, are used to evaluate the overall learning of students at the end of a unit or course. In political science, a summative assessment might include a written essay on the functioning of a democracy, asking students to compare different political systems and explain their benefits and drawbacks. In economics, a final exam could ask students to analyse the effects of inflation on a country's economy, requiring them to apply economic theories to real-world situations. These assessments often test students' ability to recall facts, understand historical events, analyse geographical data, and explain socio-political issues. They also encourage students to synthesize information from different disciplines, such as history, economics, and politics, and apply it to solve real-world problems.

In social science subjects, assessments should also encourage higher-order thinking skills, such as analysis, evaluation, and application. For example, instead of simply asking students to recall dates or facts in history, assessment tasks might involve analyzing primary source documents

to interpret historical events from multiple perspectives. In geography, assessments could involve evaluating the impact of climate change on different regions and proposing possible solutions. In political science, students might be asked to engage in a mock debate or policy-making simulation, which allows them to critically assess current political issues and develop solutions. Additionally, peer and self-assessment can be valuable in encouraging students to reflect on their own learning and understand different perspectives. This process not only promotes active learning but also helps develop skills such as collaboration, communication, and self-regulation, all of which are essential for lifelong learning.

Ultimately, effective assessment in social science subjects should be diverse, ongoing, and reflective of the subject's transdisciplinary nature, ensuring that students develop a comprehensive understanding of societal issues and are prepared to apply their knowledge in real-world contexts.

The NEP-2020 and NCF-SE 2023 emphasize competency-based, formative assessments in Social Science, moving away from rote learning. Both Policy and framework highlight real-life, application-based assessments using case studies, field reports, and surveys to foster critical thinking and problem-solving. Formative techniques like peer reviews and self-assessments are encouraged for regular feedback and improvement.

Key Takeaways

1. Curriculum of Social Sciences emphasizes individualistic and societal development and inculcation of human and constitutional values in an inclusive setup, ensuring equity.
2. Social Sciences education should ensure integration of multidisciplinary subjects and theme-based approach with local and regional context.
3. Pedagogy of Social Sciences should primarily focus on problem-solving, experiential learning, community-based approaches, and project work.
4. Curriculum design approach must be contextual emphasizing integration of local history, indigenous knowledge systems and cultural practices for encouraging deep sense of identity with nation.
5. There is a need for developing learning resource centers like, social sciences labs, culturally relevant teaching-learning materials, and assessment tools, etc. for ensuring experiential learning.
6. Socio-cultural and economic activities need to be addressed in both middle and secondary school stages.
7. Planners, policymakers, administrators, teachers, teacher educators, school heads, and community members must play an active role in making Social Science education progressive, dynamic, and futuristic, adapting to the contemporary societal issues and concerns.

Section 4.5
Art Education

Art education is essential in schools as it goes beyond just creative expression, playing a crucial role in the overall development of students. It fosters imagination, cultivates emotional intelligence and develops critical thinking skills. Art encourages close observation, critical thinking and unique problem-solving skills. When creating artwork, students engage with elements like colour, composition, texture and form which engages analytical skills and requires decision-making involving trial and error. Such experiences improve concentration and focus, which can be transferred to other subjects. Art education also enhances spatial awareness, as students learn to translate three-dimensional objects into two-dimensional representations or create sculptures that require an understanding of space and proportion.

The National Education Policy (NEP) 2020 emphasizes integrating art and creative expression into the curriculum, acknowledge that art education nurtures essential skills such as creativity, critical thinking and problem-solving. According to NEP 2020, art education is a key component of the "foundational literacy and numeracy" goal, fostering cognitive development and encouraging innovative and divergent thinking. The policy suggests that including arts in the curriculum will help students understand themselves better, appreciate cultural diversity and gain a broader perspective on the world.

4.5.1 Current Status and Challenges of Art Education in Odisha

Odisha has a rich and diverse cultural heritage, with art forms that reflect centuries of tradition, spirituality and creativity. These forms are deeply embedded in history, mythology and daily life, representing unique regional, cultural and religious practices. One prominent ancient art form is *Pattachitra* painting, featuring intricate designs, mythological narratives and religious motifs on cloth, palm leaves or wooden panels. Another significant art form is Applique craft (Pipili Applique work), which involves sewing colourful fabrics into intricate patterns for decorative items. Odisha's traditional silver filigree art (Tarakasi work) is renowned for its intricate designs and delicate craftsmanship, making it a unique cultural treasure of the region. Sambalpuri weaving, a textile art form from western Odisha, is known for exquisite handwoven fabrics like Sambalpuri sarees. Odissi dance, a classical dance form, is known for its elegant movements, intricate hand movements *(Mudra)* and emotive expressions, often depicting stories from Hindu mythology and literature. With its rich history and cultural significance, Odissi has become a celebrated symbol of Odish's heritage, showcasing the state unique artistic traditions. Odisha is also home to several folk dances rooted in religious and cultural traditions, including, *Sambalpuri, Chhau, Gotipua, Paika* dance, *Medha Nrutya*, *Danda Nrutya, Ghumura and Bajasal. Ravan Chhaya*, a traditional shadow puppetry art form from Odisha's Anugul district, is not only a fascinating performing art but also serves as a valuable pedagogic tool for school children, enhancing their cognitive abilities and visual-spatial thinking skills. Dhanu Yatra is an open-air theater folk performing art form from Western Odisha that restructures the story of Lord Krishna's victory over King Kansa. Dasakathia is a traditional Odia folk song

and theatre, typically performed by a group of singers and musician, using a pair of wooden instruments.

The state's vibrant art scene extends to sculpture, with fine examples of stone carvings found on temple walls, e.g., the Konark Sun Temple, and the Rajarani temple and many other temples in Bhubaneswar. Besides Lacquer art (North Odisha), and terracotta sculpture is very popular form of conventional art in Odisha. Metal crafts like bell metal and bronze work (Dhokra casting) are also prevalent, with artists creating intricately designed utensils, idols, toys and decorative pieces. Sand art, as a new medium, is another significant innovation of Odisha art form, especially during the Rath Yatra festival, with skilled artists creating sculptures that often depict religious themes, social issues and cultural motifs.

The art education system in schools faces several challenges that limit its effectiveness and impact on students. In Odisha, art education often suffers from budget constraints, a shortage of qualified art educators and the undervaluation of art compared to core subjects. Rural and economically disadvantaged regions struggle to provide quality art education, and art education is often taught in isolation. Furthermore, art education is often undervalued, with core subjects like math, science and language arts taking precedence. Cultural biases, technological challenges and insufficient support from parents and communities further hinder the development of robust art programs. In a nut-shell, the lack of funding, teacher shortages, systemic educational priorities, and inequality in access, all contribute to the underdevelopment of art education in schools, highlighting the need for reform and greater integration of arts in curriculum.

Addressing these challenges requires a comprehensive approach, including increased funding, teacher training, community engagement and policy reforms to ensure that art education is accessible, meaningful and effective for all students. The improvement of Odisha's school art education system can be significantly enhanced by a specific syllabus dedicated to art education, grade specific textbook and art model resource similar to other core subjects. A structured curriculum focused on diverse art forms such as visual arts, music, dance and theatre can help cultivate students' creative skills from an early age. Additionally, implementing capacity-building programs for teachers will equip them with the necessary tools to effectively incorporate art integrated learning (AIL) approaches. By prioritizing art education and its integration into the mainstream curriculum, Odisha can nurture well-rounded, innovative and culturally enriched students, fostering creativity alongside academic excellence.

4.5.2 Learning Standards

In the Foundational Stage, the Arts contribute towards the sensorial, physical, socio-emotional, aesthetic, and cultural development of young children. They use the space around them freely and imaginatively while creating body movements, sounds, and images to express themselves

in various art forms. They experiment with objects, materials, and tools playfully and instinctively. They also express their responses to the arts in various verbal and non-verbal ways.

In the Preparatory Stage, students continue their own artistic explorations while also developing a curiosity towards local art forms and artists. They learn to exercise their choice of materials, tools, and themes for creative expression.

The objective of Art in the Middle Stage is that students develop an appreciation for the artistic and cultural diversity of their region and other parts of India. They are introduced to basic concepts, techniques, and processes across the Visual and Performing Arts, as well as local Art traditions from different parts of India. Through regular Art practice, students in this Stage are expected to enhance their imaginative and creative capacities, as well as their appreciation of effort, originality, and refinement in artwork.

In Grades 9 and 10 of the Secondary Stage, students develop an awareness of the wide scope of applications in the Visual and Performing Arts. Along with the rigorous practice of fundamental techniques and processes, students develop the capacity to interpret and evaluate artwork. The larger objective at this Stage is to inspire meaningful connections between the Arts and their own lives through a deeper engagement with diverse artistic expressions.

Across the Stages, the Arts nurture creativity and aesthetic sensibilities in all students. At every Stage, collaborative work provides opportunities for developing mutual appreciation, respect, love, compassion, patience, persistence, and hard work. Most importantly, the Arts focus on instilling joy and pride in India's rich artistic and cultural diversity. All schools must aim to provide maximum opportunities for students to explore any form of Visual and Performing Arts (Music, Theatre, Dance, and Movement) across all the Stages. The art forms that are chosen by the school should be appropriate, accessible to all students, and have relevance in their contexts.

4.5.3 Content selection and Organization

Following principles should be followed in selection of content:

a. **Age-appropriate content:** While choosing themes, tools or activities for art education, students' age group and developmental stage must be taken into consideration.

b. **Provide the dignity of all types of art work:** Content selection should reflect equal importance and values to all kinds of art work.

c. **Include traditional and local specific Art form:** Students are exposed and aware of traditional and indigenous art and craft work of their locality.

d. **Stimulate questioning and critical reflection:** Content should encourage questioning and critical thinking among students to explore, analyze and interpret various forms of artistic expression, fostering creativity and intellectual curiosity.

e. **Uphold values:** The selection of content must uphold the values of cultural diversity, inclusivity, creativity and critical thinking, while promoting artistic excellence and aesthetic appreciations.

4.5.4 Organization of Content

Foundational Stage: Content selection for the foundational stage in art education should focus on introducing young students to basic artistic concepts and local cultural heritage. At this stage, students can begin exploring fundamental elements like shapes, line drawing and coloring to building their foundational skills. Simultaneously, it's essential to introduce and aware them about Odisha's rich traditional art forms and folklore, e.g., *Pattachitra, scroll painting technique, silver filigree work, Sambalpuri Ikat pattern.* Students should also know and be aware about the architecture of the Konark Temple, renowned for its intricate carvings and design. To deepen cultural understanding, it is important to introduce Odisha's diverse dance forms such as *Odissi, Chhau, Gotipua* and *Sambalpuri folk dance*, which reflect the state's artistic heritage and traditions.

Preparatory Stage: At the preparatory stage, art education focuses on developing students' foundational skills through simple drawing and sketching, allowing them to explore basic shapes, lines and forms. Students also learn various painting techniques, such as water colors and poster colors, encouraging creative expression. Clay modelling can be introduced, helping students develop a sense of texture, form and three-dimensional art. Students can also explore unique art forms Odisha like *Pattachitra* painting, *applique* work and the intricate designs of *Sambalpuri* textiles. In addition, introduction and practice the different form of Odisha's traditional art and craft, mudra of Odissi dance and building in foundational musical skills like *Naada* and *Vaadan* (concept of sounds and volume). This stage nurtures both technical skills and cultural appreciation, and students should start developing their artistic skills while gaining deeper exposure to local traditions and more refined techniques.

Middle Stage: At the middle stage, art education focuses on refining skills and exploring themes. Students practice advanced drawing techniques, such as shading, perspective and intricate detailing. They are encouraged to create art addressing social issues like environmental conservation, gender equality, and other societal concerns, learning to express these ideas through visual art. The curriculum introduces mixed media and modern techniques, expanding students' creative toolkit. Also develop the skills on creating the illusions of three-dimensional space in a two dimensional art work, ratio and proportions, form and function. Sculpture and 3D painting are explored, allowing students to work with form and space. At this stage in the area of songs and music, learners know about musical instruments and exploration of Odisha's diverse traditional art forms, including *Pattachitra, Applique* and tribal art, that helps deepen cultural understanding and creativity.

Secondary Stage: At the secondary stage, art education emphasizes advanced art practices, conceptualization and thematic artwork, allowing students to express deeper ideas and personal themes. Students are introduced to digital art forms, expanding their skills to include digital tools and techniques. Portfolio development is a key focus, helping students compile and present their artistic growth and creativity. The curriculum also probes into Odisha's rich cultural heritage, exploring elements such as the Jagannath culture, the intricate mudras of Odissi dance and the architectural glory of the Sun Temple. This stage fosters both technical expertise and a profound understanding of cultural traditions. In this stage, students should be encouraged to explore their individual artistic voice while understanding the broader context of art history, culture and

contemporary practices.

4.5.5 Guideline for LTMs and Textbook Developer

The development of art learning teaching materials and textbooks in the school education context should focus on clarity, creativity and student engagement. Content must align with curriculum guidelines, ensuring that it covers essential art concepts and skills. The language should be simple and accessible, catering to students of various learning levels. Visuals, such as images of artworks, diagrams and step-by-step instructions, should support the text to help explain complex ideas. Activities and exercises should encourage hands-on exploration, promoting creativity and critical thinking. It is important to incorporate diverse art forms and cultural perspectives to enhance inclusivity and global awareness. The materials should also provide opportunities for self-expression, reflection, and cross-disciplinary learning. Clear learning objectives and assessment tools should be included to help both students and teachers monitor progress. Finally, the textbooks should be adaptable to different teaching methods and classroom settings, ensuring flexibility for both group and individual learning.

4.5.6 Pedagogy for Art Education

Pedagogy in art education encompasses methods, strategies and principles to facilitate learning and engagement of students in the arts. Art education often uses inquiry-based, student-cantered approaches that promote creativity, self-expression, critical thinking and problem-solving. The National Curriculum Framework (NCF) for School Education 2023 adopts a comprehensive and inclusive approach to art education across various stages of schooling, integrating art with the learning process at all levels. A key aspect of art pedagogy is valuing process over product. While the final art piece is important, the student's journey to create it is more significant. Pedagogy for art education at different stages of education is presented as follows:

Foundational and Preparatory Stages: At the foundational stage, children engage in exploration of toys, puppetry and play with art integrated into subjects like language and math, promoting an interdisciplinary learning experience. Play-based pedagogy and puppetry play a vital role in improvement of oral language development at foundational stage. As students progress to the preparatory stage, art education emphasizes skill development, critical thinking and collaborative work, guided by the principles of Art Integrated Learning (AIL). Art Integrated Learning (AIL) is a pedagogy based on learning 'through the arts' and 'with the arts'. It looks at teaching as facilitation and learning as experiential. (NCERT 2023). This approach allows students to experience art as a means to understand and express academic concepts, fostering deeper engagement with learning.

Middle and Secondary Stages: At the middle and secondary stages, students refine their skills through observation and project-based art work, understanding both the process and the

aesthetics of artistic creation. The curriculum focuses on stages of aesthetic development, helping children appreciate complex artistic concepts while encouraging individual expression. While at secondary stage, the NCF advocates for inclusive teaching strategies that cater to diverse abilities, ensuring that art education becomes accessible and beneficial for all learners.

Inclusive teaching practices are crucial in art education for both pedagogy and assessment. Art expresses diverse cultural and social identities and a well-rounded pedagogy that ensures students from all backgrounds feel valued. Exposure to various art forms from different cultures, through field trip, helps students appreciate diversity and gain a broader world understanding.

4.5.7 Assessment in Art Education

Assessment in art education, as outlined in the NCF 2023, focuses on a holistic approach that evaluates both the process and the outcomes of students' creative development. It must be based on evidence from students' performance, creative thinking process and capacity to respond to and appreciate the different art form. One key method of assessment is the creation of a learner's portfolio, which allows students to document their artistic journey, showcasing their work, and progress and reflections over time. This portfolio serves as a personal record of growth, helping both students and teachers identify areas of improvement and achievement. In addition, reflective journals are encouraged, where students can articulate their thoughts, challenges and learning experiences related to art. This reflective practice enhances self-awareness and critical thinking. Furthermore, the use of rubrics is essential for assessing performance, providing clear, structured criteria for evaluating various aspects of students' work, including creativity, expression and effort. This comprehensive approach ensures a holistic assessment that values both the process of learning and the final product in art education.

Key Takeaways

1. Specific art education syllabi and grade-specific textbooks should be developed and introduced in schools of Odisha to ensure structured and culturally relevant learning experiences for students across all grade levels.
2. Art education curriculum should maintain balance between traditional and contemporary art forms.
3. Content selection must emphasize cultural diversity, indigenous art and traditions as well as cultural practices of Odisha.
4. There is a need to introduce Art Integrated Learning (AIL) approach as a pedagogic tool for teaching of basic school subjects, such as language, mathematics, science, and social sciences, mostly at preparatory and middle stages.
5. Schools should be provided with support for implementation of Art education by allocating dedicated time, space (art gallery) and art resource room equipped with basic tools for art education.
6. Schools should use multiple assessment tools for art education such as, portfolios, rubrics and performance-based tasks.

7. Capacity-building sessions for teachers and other education functionaries on art integration across different subjects must be organized at different level.

Section 4.6
Education in Interdisciplinary Areas

4.6.1 The Context

Interdisciplinary learning involves the integration of multiple academic disciplines into one activity. Interdisciplinary learning helps students see the connections between the natural environment and social processes. Children develop an awareness and appreciation of the interdependence between the natural and human made environments and the various economic, socio-cultural, political, historical, ethical, and aesthetic dimensions of human societies. The need for balance between the environment and human society will be part of this learning. This will enable students to make intelligent and inform decisions about individual and collective work to solve current problems and prevent new ones. Education in Interdisciplinary Areas will break down the silos of disciplines which often render knowledge gained within disciplines unrelatable to the real life of the individual.

In this context, two matters have a deep underlying alignment. First, the importance of interdisciplinary learning and study. Second, developing the sensitivity, capacities, and understanding for living in harmony with nature, including the range of urgent issues around climate change and the environment. Emphasis will be given to develop interdisciplinary knowledge and capacities, as also their use for development of values and dispositions, including those related to the environment. All subjects would include this interdisciplinary approach and aspects of living in harmony with nature, and these would be addressed appropriately at each Stage.

4.6.2 Learning Standards

In the *Middle Stage*, students develop multiple capacities, including values and dispositions related to human and constitutional values. They engage with various concepts, particularly those related to science, social science, as well as, the environment. Individuals in society is intended to enable students to use these capacities and understanding in an interdisciplinary manner in the secondary stage. Through this, they will develop the capacity for ethical and moral reasoning in the context of issues or events with a wide impact and current affairs.

At the *Secondary Stage*, all the students must be aware of what is happening around them related to the environment to be able to advocate and participate in necessary action. Environmental education intends to develop the environmental understanding necessary in all citizens, as well as, the methods and capacities they must employ as ordinary citizens. For example, problem identification, causes, future impact visualisation, prediction, policy actions, societal actions, as well as, actions at the level of individuals, and the ability to critique specific actions and their impact.

The detailed Curricular goals and Competencies are given under Annexture.

4.6.3 Content Selection and Organization

An integral part of the Interdisciplinary Areas is Environmental Education. The focus of Environmental Education through school Stages is to develop capacities for understanding the need for and acting to maintain balance and harmony between human society and nature.

In the ***Foundational and Preparatory Stages***, students will be engaged with their immediate social and natural environments and move towards the state, region, and country. Students are exposed to local stories, poems, narratives, folklore, histories, and games. They explore diverse socio-cultural practices, traditions, and festivals within their community, and connect these to the influence of the natural environment.

In the ***Middle and Secondary Stages***, through an integrated approach with other disciplines as well as in the form of an essential area of study in Grade 10, students deepen their conceptual knowledge, and are able to use this to acquire an understanding of how Indian cultures and traditions evolved across the country through Interdisciplinary Areas in an integrated approach in different subjects viz. Languages, Science, Mathematics, Social Science, Technologies, Physical Education and Well-being, Values and Dispositions, Inclusive Practices for Students with Disabilities (the RPWD Act with reference to Physical access for all students with disabilities, Early identification and early intervention for children, Curricular and Pedagogical accommodations, Illustrative content accommodations, Illustrative pedagogical accommodations, Illustrative assessment accommodations), Guidance and Counselling in Schools, Evolving and Emerging Technologies like, Artificial Intelligence, Machine Learning, Augmented Reality, Virtual Reality etc.

Individuals in Society (developing moral and ethical reasoning) will be introduced in Grade 9, and Environmental Education (EE) will be introduced in Grade 10. In Grades 11 and 12, Interdisciplinary Areas will include a range of subjects, such as, Sustainability and Climate Change, Public and Community Health, Media and Journalism, Legal Studies, Commerce, Family and Community Sciences, and Indian Knowledge Systems. The list and offering of subjects would depend on other practical considerations, such as availability of Teachers and interests of students. The specific aims of each Interdisciplinary Area would be to develop an integrated understanding of the chosen subject matter, while developing interdisciplinary capacities.

In the Foundational Stage, Curricular Goals are organized around the domains of development, and not specific curricular areas/subjects. Therefore, interdisciplinary is inherent at this Stage. In the Preparatory Stage, The World around us is designed as an Interdisciplinary Area, specifically meant to help students observe, engage with, and understand their immediate social and natural environment. At the Middle Stage, interdisciplinary Curricular Goals are embedded within specific curricular areas. Interdisciplinary learning, including learning about the environment, is developed through specific Goals and Competencies in the Learning Standards, and all the related curricular arrangements for achieving those - from content, and pedagogy, to assessment. In the Secondary Stage, a specific Curricular Area called Interdisciplinary Areas is introduced to promote interdisciplinary knowledge, capacities, and thereby values and dispositions.

4.6.4 Pedagogy

The pedagogical approach will focus on the immediate environment of students, with gradual progression beyond the city/town/village at the end of the Preparatory Stage in order to gain foundational knowledge of Science and Social Sciences as well as grounding in Environmental and Vocational Education. Knowledge, values, and dispositions will be developed through various sources from the locality, region, and country. Focus will be on stories, poems, narratives, folklore, histories, and games from diverse sources. The pedagogy at this Stage will also lend itself to the development of prevocational capacities, e.g., maintaining flowerpots/kitchen gardens, clay modeling, and dialogue with shopkeepers during visits to the local markets, etc.

Students in the Preparatory Stage will learn about the environment through structured interaction with their natural and social environment, exploration, discussion of experiences and observations, interaction with adults and peers, exemplars, task-oriented activities, structured observations, experiments, surveys, and field visits. This engagement with the immediate environment provides a base for moving into exploring larger systems (from locality to district to region to state to nation to world and Universe also), broader issues (from home to community to larger society), and an expanding understanding of concerns, connections, and consequences. Thus, students' will apply their understanding from 'near' to 'far'.

At this Stage, teachers will have specific capacities illustratively, environmental awareness and sensitivity, pedagogical approaches informed by an understanding of the context and students' ability, to evolve understanding through discussion, and of the use of multiple methods. . Teachers of either Science or Social Sciences can teach The World Around Us till pre-service programs start offering this specialization, provided they undergo well-designed in-service modules.

At the Secondary Stage, the Social Sciences Teacher should teach Individuals in Society and the Science Teacher should teach Environmental Education. In Grade 9, there will be a need for Teachers who are aware of issues/events in the four domains (Socio-cultural, Economic, Political and Environmental). Training modules must focus not only on content but also require Teachers to examine their personal, moral and ethical frameworks. Teachers within the school must meet regularly to discuss current affairs, and strengthen their own capacity for discussion and debate, and the application of ethical and moral reasoning, as well as applying interdisciplinary understanding. This will also help ensure inclusion, and subject-related expertise. In Grade 10, the Science Teacher should handle Environmental Education. The Teacher of Environmental Education should combine relevant understanding of both Science and Social Sciences at the school level and able to draw linkages between the two.

Content of the curriculum will be contained in and manifest directly in the various resources and materials used in the teaching-learning process. The learning environment of students must be safe, inclusive and stimulating. Overdependence on textbook must be reduced and emphasis should also be given to use of reference books, and learning materials. Assistive devices and appropriate technology-based tools, as well as adequate and language-appropriate TLMs should be made available. This applies to all school activities, including art, sports, and

vocational education.

Given that this is a new Curricular Area, challenges can only be anticipated. Primary among them is Teacher preparedness. As there is no formal structure to prepare Teachers for EVS, they often tend to focus on concepts related to their subject specialisation, e.g., Language, Mathematics, etc. It has been observed that content related to the natural environment is managed with greater ease by teachers, but they find issues connected to the social environment. While the capacity building of teachers is critical, until pre-service teacher education makes the necessary transitions, the capacity for academic support in institutions will also need to be developed, particularly for the Secondary Stage. The pre-service curriculum must have Environmental Education as a compulsory component. Student Teachers can also undertake projects and small research studies related to Environmental Education aligned to those expected from school students. Until this transition is made, well-designed training modules will be needed for capacity building of teachers.

4.6.5 Assessment

Students must be assessed for understanding of concepts and for the ability to demonstrate capacities particular to this subject, e.g., observation, making hypotheses, testing hypotheses via suitable experiments, identification, and classification. Students must be assessed using multiple methods and tools like, oral, written, group work, creating art effects, designing or replicating experiments, analyzing data and results, and participating in discussions.

Key Takeaways

1. Diversity of Odisha must be reflected in the content, pedagogy and assessment of Interdisciplinary Education. The curriculum in Odisha should be holistic, inclusive, and rooted in local knowledge, while preparing students for global opportunities.
2. In the Foundational Stage, Curricular Goals are organized around the domains of development, and not specific curricular areas/subjects. In the Preparatory Stage, the World Around Us is designed as an Interdisciplinary Area. At the Middle Stage, interdisciplinary Curricular Goals are embedded within specific curricular areas. Individuals in Society will be introduced in Grade 9. Environmental Education (EE) will be introduced in Grade 10. In Grades 11 and 12, Interdisciplinary Areas will include a range of subjects, such as, Sustainability and Climate Change, Public and Community Health, Media and Journalism, Legal Studies, Commerce, Family and Community Sciences, and Indian Knowledge Systems.
3. The pedagogical approach in the foundation stage will focus on the immediate environment of students, with gradual progression beyond the city/town/village. Students in the Preparatory Stage will learn about the environment through structured interaction with their natural and social environment. At the Secondary Stage, the Social Sciences Teacher should teach Individuals in Society and the Science Teacher should teach Environmental Education.

4. Assistive devices and appropriate technology-based tools as well as adequate and language-appropriate TLMs should be made available to all school activities, including arts, sports, and vocational education.
5. The pre-service teacher education curriculum must have Environmental Education as a compulsory component. Student-Teachers can undertake projects and small research studies related to Environmental Education aligned with those expected from school students.

Section 4. 7
Physical Education and Well-Being

Physical education and well-being in school aims to help students learn to lead a physically active, vigorous, and healthy life. In this SCF, the term 'Physical Education' (or PE) has been used in the place of 'Physical Education and Well-being'. Physical Education consists of movements, drills, exercises, yoga, games, sports, and other activities that promote mind-body wellness. Physical Education should provide a wide range of age-appropriate and level-appropriate physical activities that develop knowledge of the body and of games and sports, together with a disposition towards perseverance, teamwork and sportspersonship. In addition, it also provides students with various opportunities for their career exploration, participation, and pathways. Physical education aims to foster appreciation for physical activity, skillful engagement in sports, resilience, tenacity, empathy, cooperation, and fair play.

The NCF-SE 2023 outlines a structured approach to physical education, ensuring its inclusion across all school stages from free play in early years to specialized training in secondary school. Physical education activities play an important role in promoting the development of *Annamaya* and *Pranamaya Kosha* through exercises, games and mindful practices. Activities such as love, gratitude and compassion cultivate the values of *Manamaya* and *Anandamaya Kosha*. Activities like critical thinking, problem solving and observation can support the development of *Vigyanamaya Kosha*. It advocates for equal access to physical education regardless of gender, ability, or resource limitations and calls for adequate facilities, trained teachers, and a supportive school environment.

4.7.1 Status of Physical Education in Odisha

Odisha School Education Program Authority (OSEPA) has undertaken *"Panchasakha Sikhya Setu"* and *"Kridangana club"* in class IX and X which encourage sports and life skill practice through minor activities in schools. Government has implemented Olympic Value Education Program (OVEP) since last three years, which aims for students' participation in and appreciation of the value of Olympic Games. This program and the centers established for the purpose aim to nurture top-tier athletes by providing world-class infrastructure, coaching, and sports science support. Schools are being encouraged to identify and train students, who are having potential in sports and games. Odisha has been participating in the "*Khelo-India*" program to promote sports at grassroots levels and encourage schools to conduct inter-school and district-level competitions. The Mid-Day-Meal (MDM) scheme ensures that students receive proper nutrition, which has a crucial role for their physical health. Special attention is given to improving the nutrition levels of students in tribal areas. Schools are working on inclusive Physical Education programs that accommodate students with disabilities. Adaptations in games and activities ensure participation of all students to make the program more inclusive. All the government schools for the elementary to the secondary level are provisioned with sports grant of Rs. 5000/- per Primary school, 10,000/- per Upper Primary

school, and 25,000/-, per Secondary to Sr. Secondary school for expenses on procuring sports equipment for indoor and outdoor games (OSEPA Annual report 2023-24). The state government has taken several steps to promote sports and physical fitness in schools by integrating physical education into its school curriculum. However, all these efforts are sporadic in nature.

In Odisha, many schools face challenges such as lack of sports infrastructure, sports equipment, dearth of physical education teachers and standardized methods of assessment. Physical education is an undervalued subject and is often seen as a leisure-time activity. There is a gap of knowledge due to the shortage of scholarly researchers and a structured physical education curriculum at school level, which demotivates the students and parents towards participation in physical activities. Efforts have been made to train general teachers to conduct basic physical education sessions in the absence of physical education teachers.

4.7.2 Learning Standards

Learning standards for physical education across stages flow across four core areas: (i) motor and movement skills to participate in different physical activities; (ii) appropriate personal and social behaviours; (iii) mental engagement in physical activities; and (iv) setting and achieving goals or targets. They progress in complexity and diversity along these four core areas across stages. For example, movements and skills start with learning basic skills such as kicking, hitting, catching and throwing, which progress to the next level by combining them with movements, e.g., throwing while running. This further progresses to the next level by combining more than one movement with skills, e.g., running, jumping and catching simultaneously or anticipating, diving, and catching the ball on the move. Similarly, personal and social behaviour ranges from simply observing and following rules at the Preparatory Stage to regulating one's own behaviour and that of the teammates. Mental engagement spans around observing and finding patterns at the Preparatory Stage and runs into game strategies by the end of the Secondary Stage. Setting targets and recording progress begins with simple things like being able to just record your progress against a target set by the teacher and goes on to assessing progress in terms of efforts, processes, and outcomes.

By the end of the Secondary Stage, every student should be able to:

a. demonstrate skills and knowledge to participate in diverse physical activities or at least play or perform in one sport or physical activity well.
b. develop resilience, tenacity, and interest in the pursuit of excellence.
c. nurture empathy, fair play, and cooperation.

The curriculum follows a 'Nested' approach, with core Learning Standard (LS-1) and an essential subset of skills (Learning Standard 2 or LS-2) for immediate implementation. The LS-1 details the full range of curricular goals and competencies across physical education. These should be accomplished by all schools as soon as they add to the required resources for physical education. Nested within this is a subset called LS–2. These should be accomplished by all schools from the very initiation of the implementation of this SCF. The detailed curricular goals and competencies are given under annexture.

4.7.3 Content Selection and Organization

Physical education will be a core curricular area with its own standard of pedagogy and assessments. All students will participate in physical education classes throughout their school journey, and schools must ensure to provide adequate resources and equal opportunities for all students, including those with disabilities. In all stages, children learn the best when they actively participate by engaging their senses and using their limbs as well. The Physical Education curriculum will follow a structured yet flexible approach across different school stages.

At the ***Foundation Stage***, teaching about health and hygiene practices ensures physical well-being in the long term. Children naturally take to exploratory play-based activity in the early years. Children exposed to age-appropriate physical, educational, and social activities through play-based methods learn better and grow better. From the preparatory stage onward, content can be presented through textbooks of physical education and well-being, while concrete materials and experiences still form the core of content presentation.

In the ***Preparatory Stage***, emphasis will be given to introduce sports requiring more formal engagement in physical activity. Students will spend most of their time in free play and only a little time in structured sessions. For free play to be effective and challenging for the students, the school can allow students to creatively utilize objects and materials around them that are easily available in the neighborhood. The objective is to provide students with enough objects and spaces to play different kinds of games, either independently or in group. Free play is not guided but is monitored. Teachers and facilitators need to keenly observe all the students throughout the duration. The teacher can introduce simple games which do not require a lot of explanation and are intuitive. The facilitator can either create or find games which are linked to specific skills that need to be taught. For example, jumping and hopping can be done through animal movement games like frog jumps, and running. *Gilli Danda* can be used for hand-eye coordination.

In the ***Middle Stage,*** students continue to play local games, but have more structured sessions. Students have higher proficiency with simpler games and can be introduced to popular sports gradually. The students at this stage will learn more about their bodies and learn individual practices such as yoga and strength exercises, in greater detail. They will learn to create their own warm up and cool down routines.

In the structured sessions, the teachers need to gradually bring in an understanding of more rules that will need to be remembered while playing. Specific skills needed to play popular regional sports can also be introduced. Both objectives can be met through simpler versions of the sport to begin with, and with each grade, more skills and rules of the sport can be introduced. Slowly, the complexity can be increased by playing mini versions of the sports with most of the rules in place, while also building individual capacities, such as, observation, reflection, emotional regulation, expanding spatial awareness and peripheral vision. Simultaneously, social capacities such as effective communication, collective decision making, working together towards a common goal and other such capacities will also be developed. Emphasis also needs to be given to students taking more responsibility for building a culture of inclusive

sports at school. They need to play an active role in ensuring that all students feel safe and are encouraged to play.

At the ***Secondary Stage***, selected students can be given a choice to engage with certain sports more seriously than others, while other students will be encouraged to play multiple sports. The sports can be played with all the international rules and with all its complexity. Students who choose a particular sport more seriously can be trained more rigorously through sports-specific drills. Playtime for students needs to be balanced with drills based on student interest. Those who are not keen on building superior skills should be allowed 'free play' with different sports and be not be forced to pick one particular sport. There should also be sufficient focus on building strength and flexibility through Yoga and strength conditioning. Students must be taught about common injuries and how to avoid them through practice.

The emphasis on circle time and building a culture of sport must increase at this stage. Students should be encouraged to discuss their emotional states while playing more openly with one another. Students must be taught to set right examples for younger students and help teachers in organizing school sports events. For example, senior students can help organize athletic events on campus. They could also be referees or umpires for games conducted for younger students. Secondary students can be given leadership roles, which will help them build their skills too. For example, a student can be asked to facilitate circle time, with the instructor only participating as an observer.

It is also important to include local and indigenous games and sports, such as Hockey, Ultimate Kho-Kho, Circle Kabaddi, *Kusti*, *Malkhamb*, *Bagudi Khela, Puchi, Kelli-Badi, Chhoti Para, Bohuchori, Dala Mankudi, Kit Kit, Luchakali, and Daudi Dian* (Skipping), among others. In various sports festivals, local sports, such as *Chhau dance* and *Paika Akhada,* which are martial art dance forms can be showcased to develop agility and balance. Highlighting legendary sportspersons of Odisha in the curriculum can inspire students and motivate them towards games and sports. Furthermore, every school from primary to secondary, should have a physical education trainer to enhance students' understanding of various sports. The trainer can also assist in guiding students towards potential sports careers. Yoga classes, particularly Yogasana and Pranayama, should be mandatory for all stages in schools. Other rhythmic activities and exercises, such as aerobic exercises, mass physical training, Lezium, and flag drills, may be practiced periodically to improve coordination.

Across all stages, 30 minutes of free hand exercises for every class is mandatory for complete physical fitness of children. Understanding of preparation of games, inclusive participation, self-reflection, and emotional regulation are encouraged through "circle time." The curriculum also accounts for weather conditions, recommending timetable adjustments and indoor activities like yoga, carom, chess, etc. and free hand exercises, HIIT (High Intensity Interval Training), MIIT (Medium Intensity Intermittent Training) when necessary. Today's technology & digital resources, when used meaningfully, can complement traditional methods and enrich the learning experience, making it more interactive and enjoyable. Teachers discussing legendary sports personalities should prioritize local athletes and sports personalities to inspire students.

4.7.4 Pedagogy

Like other subjects, giving space to students' context, respecting students as individuals, providing opportunities, connecting to real life, giving level-appropriate tasks, deciding content based on learning outcomes, understanding the learning levels of students, and providing periodic assessment and feedback are effective teaching-learning practices in physical education too. Physical education requires teachers to demonstrate so that students can observe, practice and learn. Time should be provided for interactions moderated by teachers before and after the activity. Regular progressive practice and layered learning lead to proficiency. Students learn best when they have a diverse set of activities to choose from. Schools should design a range of activities and sports for all students, including those with disabilities. Teachers should encourage sportspersonship, avoiding personal comparisons, and focusing on skill acquisition. A motivating environment and a focus on personal improvement provide students with a positive and satisfying learning experience. Concrete planning of the Physical Education class is the key to one's instructions such as, avoiding injuries through warm up and cool down activities, ensuring safety in the use of equipment and space, teacher demonstrations and modeling, planning for mitigating challenges for different groups of students, etc. In schools, teachers should incorporate Odia rhymes, local music, and songs for warm-up exercises and aerobics. Games and activities must be chosen so that students of all genders and abilities can participate. Teachers must encourage active involvement, support students to acquire skills, acknowledge and appreciate growth and improvement and give everyone a chance to participate, be sensitive to students' feelings of pressure or anxiety, and treat every student fairly. A safe environment in physical education must be created where students feel emotionally and socially safe and receive respectful treatment, encouragement, support and fair redressal of grievances during a physical education class.

Regular training and capacity building for teachers is needed to address the shortage of physical education teachers, especially in rural areas, by providing training to general teachers in basic physical education pedagogy.

4.7.5 Assessment

Inclusive teaching methods enhance skill acquisition more effectively than competitive approaches. Assessment should be performance-based like participation, demonstration, observation, and self-reflection. Values and dispositions should also be assessed through demonstrated performance. Written tests and viva-voce should be utilized for specific competencies, such as knowledge of one's body, growth and development, rules and regulations of games and sports. Student Records should be maintained by teachers. Students may be encouraged to maintain a portfolio and reflective journal.

Key Takeaways

1. Physical education must follow a structured yet flexible approach, ensuring its inclusion across all school stages, free play in early years to specialized training at secondary stage.

2. From the preparatory stage onward, content can be presented through textbooks of physical education and well-being while concrete materials and experiences still form the core of content presentation.
3. At least 3-4 periods of Physical Education per week will find place in school timetables.
4. Physical Education cell can be established at state level and at DIETs to ensure that implementation in schools is not sporadic.
5. Adequate infrastructure, sports equipment and sports facilities need to be created in schools.
6. Schools must ensure equal opportunities for all students, including those with disabilities.
7. It is important to include local and indigenous games and sports in schools.
8. Regular training and capacity building for teachers is needed to address the shortage of physical education teachers, especially in rural areas, by providing training to general teachers in basic physical education pedagogy.

Section 4. 8
Vocational Education

Vocational Education enables the learning of specific knowledge, capacities, and values, such that the students upon finishing school, are ready to work in a vocation of their choice, and to deal with the day-to-day practicalities of life. School education must provide both possibilities to all students – to join the workforce or to pursue higher education. The National Education Policy (NEP) 2020 aims to improve Vocational Education in India by integrating it into mainstream education. The policy aims to provide Vocational Education to at least half of students in schools and higher education. The policy states, "By 2025, at least 50% of learners through the school and higher education system shall have exposure to vocational education, for which a clear action plan with targets and timelines will be developed. This is in alignment with Sustainable Development Goal 4.4 and will help to realize the full potential of India 's demographic dividend". The policy further aims to expose students to Vocational Education at an early age. It states, *"All students will participate in a 10-day bagless period during Grades 6-8 where they intern with local vocational experts, such as carpenters, gardeners, potters, artists. Similar internship opportunities to learn vocational subjects may be made available to students throughout Grades 6-12, including holiday periods." [NEP 2020, 4.26]*

Vocational Education enables the learners to acquire specific knowledge, capabilities, and values, so that students are ready to work in a vocation of their choices. It not only prepares the students for ready to work, but also develop competencies in other curricular areas. More focus to be given to local vocations with employment opportunity instead of aspirational vocations. Though students at secondary stage learn specific vocation to get employed, but they will be provided wide range of exposures and the culture to appreciate the dignity of work. Vocational Education can be integrated within schools within the existing resources, constraints, existing teacher and resources. Teachers must be able to distinguish between Vocational Education and skill training.

Some vocations may have greater opportunities for employment. The inspirational vocations are different from the ones that may have greater employment opportunities locally or in the vicinity. Dignity to all types of Work and wide-ranging exposure to be given to the students. The knowledge and capacities that students bring to the classroom can be used as a resource for a vocation. Vocational Education can be integrated within schools within the constraints of existing teacher and resources. Vocational Education curriculum should be age-appropriate, as localized as possible, aspirational, exposure to different kinds of work, equity considerations and value for working with hands.

4.8.1 Vocational Education and Skills Training

As mentioned in the NCF-SE, capacities are broader, deeper, and more complex human abilities, while skills are narrower and more focussed. Most capacities are constituted by many skills. In other words, many skills are required to develop a capacity. For example, critical

thinking is a capacity, while sorting data is a skill which is part of critical thinking. Appropriate irrigation of crops is a capacity, which requires the skills of reading the landform and its slopes, trenching and constructing channels, and understanding how much and when to water. Vocational Education focusses on capacities relevant to particular vocations, however, a vocation requires more than capacities. For example, the vocation of 'grooming and personal. care' requires not only the skill of haircutting or pedicure, but also requires the knowledge of different kind of hairstyles and methods of pedicure. It also requires a disposition of serving with dignity. Thus, school education focusses on Vocational Education while the large skills training system complements it by focussing on skills.

4.8.2 Status of Vocational Education in Odisha

Vocationalization of Secondary and Higher Secondary Education program started in Odisha from the academic year 2016-17 and schools implemented it in phased manner. It is now offering vocational subjects as third optional subject with the general academic subjects for Secondary and fourth elective subject in Higher Secondary Schools. The program is being operationalized with third party vendors for engaging trainers at school level. Two trades are being provided in each school and lab set up has been made in schools for practical hands-on skill of the students. The Vocational Trades/Sectors in Odisha are Apparel, Agriculture, Automotive, Beauty & Wellness, Construction, Electronics & Hardware, Food Processing, IT-ITeS, Retail, Plumbing, Telecom, Tourism & Hospitality. As many as 26 Job roles in 12 vocational sectors are are available in schools of Odisha.

The World Skill Centre in Bhubaneswar provides both pedagogy and technical training support for vocational education so as to equip trainers with the skills needed to teach students at the school level effectively. After completing Class 12, students can enroll in short-term or long-term courses, enabling them to gain practical experience and enhance their career prospects and future opportunities. ITIs and Government Polytechnics plays a key role in offering career guidance, refresher training programs for vocational trainers, and upskilling courses for vocational students after Classes 10 and 12. Additionally, these organizers organize job fairs and placement drives at the district level to enhance employment opportunities.

The major challenges with the implementation of Vocational Education in Odisha that need to be addressed on a priority basis, *inter alia*, include: limited access to vocational courses, less enrollment for vocational courses, lack of public interest, non-availability of academic and ministerial staff in the existing institutions, weak linkage between the institutes and the industries, lack of monitoring and supervision, inadequate space for evaluation at regular interval for timely onsite support, less scope for pursuing higher education in this field, and lack of scope for vertical and horizontal mobility.

4.8.3 Learning Standards

Vocational Education at foundational and preparatory stage shall develop prevocational capabilities and positive attitude towards productive work. Students will engage in different forms of work to learn a range of common capabilities, knowledge bases and values at middle stage, those will form the basis/foundation for later specialization. Students will deeply engage

in a few vocations at Grade 9 & 10. This will involve rigorous practice and field-based exposures. In grade 11 & 12 students will specialize further in chosen vocation. Curricular goals in Vocational Education (middle and secondary stage) include competencies the students would develop to be able to contribute to home-based tasks. Local context is key to content, pedagogy and assessment of learning outcomes. The curricular goal and competencies for different stages are annexed.

4.8.4 Stage-wise Designing of Approaches

Vocational Education not only prepares the students for ready to work, but also develop competencies in other curricular areas. More focus to be given to local vocations with employment opportunity instead of aspirational vocations. Though students at secondary stage learn specific vocation to get employed, they will be provided with a wide range of exposures and the culture to appreciate the dignity of work. Vocational Education can be integrated in schools within the existing resources, constraints, and teaching-workforce. Teachers must be able to distinguish between Vocational Education and skill training.

Foundational Stage: In this stage, an integrated approach will be followed where 'work skills' are learnt through regular classroom process. The focus will be on physical development and motor skills through movement and exercise, working and completing a task, and play-based education. One of the important curricular goals at this stage is to develop a positive attitude towards productive work and service or Seva among children.

Middle Stage: The guiding principle for the Vocational Education curriculum is 'forms of work' through different vocations and services such as, agriculture, textiles, and commercial art in order to comprehend how vocations and services are mapped from their respective forms. Specific vocations within these forms of work will be contextualized. This NCF uses *'forms of work'* as a guiding concept for designing the curriculum. Productive work can be divided into three categories – work with life forms, work with materials and machines, and work on providing human services.

Working with life forms involves developing capacities to do productive work that involves plants and animals. For example, a school could choose to develop a vegetable garden or a chicken coop as part of this category in the Middle Stage, and floriculture, dairy farming, sugarcane cultivation, or natural farming in the Secondary Stage. Working with machines and materials involves comprehending how any machine or tool works lead to tangible outputs. Students can be involved in this form of work by introducing handicraft work using various materials, such as, paper, wood, clay, clothes in the Middle Stage and robotic welding along with advanced courses in carpentry and tailoring in the Secondary Stage. Work in human services involves interaction with people to understand their needs and requirements. It deals with the capacity to communicate well and understand the processes and resources involved in providing a particular service.

Secondary Stage: Grades 9 and 10: Students will be given exposure to six vocations (two from each form of work) spread over two years. These will be at least equivalent to NSQF Levels 1 and 2, where relevant. The vocations will be carefully identified considering the basic skills needed by students at this stage for each of the three forms of work. The focus would be

on developing the appropriate skills with hands-on experience with the tools and techniques involved; only the limited theoretical knowledge relevant to students will be included. The hands-on experience will be supplemented with internship opportunities at this stage.

Secondary Stage: Grades 11 and 12: In Grades 11–12, students take choice-based courses in different curricular areas. Vocational Education is one of the curricular areas that should be available for students. Students choosing vocational courses from this curricular area would have in-depth training in a specific vocation over the period of two years.

4.8.5 Content Selection and Organization

The principles of selection of vocations from within forms of work are as far as possible locally relevant, address and respond to students' aspiration, levels must be aligned to the expectations outlined in the National Skill Qualification Framework.The principles of selection of content within vocations are: It must be age appropriate, interesting and meaningful, foster respect for the dignity of labour, enable exposure to different aspects of vocations, enable exposure to the ecosystem within which the vocation is placed, encourage students to develop and pursue specific interests, and provide hands-on exposure.

4.8.6 Pedagogy

Knowledge, capacities, and values related to Vocational Education are acquired through consistent practice of doing and exposure to on-site work. This, work must result in productive outcomes, and students must be able to experience actual workplaces and meet people in these workplaces. The pedagogical principles for the vocational education are balance of doing and thinking, workshops and project-based learning, learning in work contexts workshops, appropriate for developing specific skills. Projects are of longer duration and can run over multiple weeks or even months. Exposure visits to nearby workplaces to observe productive work and interaction with people involved in productive work gives an experiential understanding of the work involved. Internships of short-duration placements in a workplace to learn about a specific job role.

In the Secondary Stage, students will need to be given advanced on-site exposure in industrial/ agricultural spaces to broadly understand the functioning of vocations in the world of work. Schools must develop linkages with local industries, farms, service centres, cooperatives, relevant NGOs, state transport corporations, cottage industries, printing presses, call centres, software design companies, mobile operating companies, law companies, and local water/ electricity boards, etc. to enable students to spend part of their time gaining work/ practical experience, while they are still in school.

In Vocational Education, all students should be given equal access in terms of working with tools and resources. Teachers must ensure that no discrimination takes place towards students having disabilities or students from specific genders or socio-economic backgrounds.

Safety considerations related to vocational education involve both the physical and emotional safety of students. Physical safety relates to the use of equipment that has the potential to harm students. Emotional safety relates to protecting them from exposure to experiences that may

distress them, as well as sensitizing persons who will interact with them within and outside the school. Exposure visits, internships and apprenticeships will have to be carefully planned in consultation with parents/guardians to ensure safe transit between school, home, and workplace.

4.8.7 Assessments

Some key principles of assessment in Vocational Education are that Students must be assessed on the capacities and values and dispositions related to the form of work they have engaged. Students must be assessed primarily through demonstrated performance. Written tests may be included to assess capacities such as conceptualization and planning. Students may also be assessed on their experience and challenges they faced.

Key Takeaways

1. Vocational Education as a separate subject should be introduced from middle stage to secondary stage in all schools.
2. Specialized Vocational Education should be provided at Stage-II of secondary stage.
3. Appropriate state level authorities (e.g., SCERT, OSEPA) need to prepare training package for vocational teachers.
4. Mapping of local specific vocations/trades need to be done by District Education Authorities.

Section 4.9
Time Allocation and Reduction of Content Load

Proper time allocation and its effective management provides better results in a school. It must consider practical aspects, such as time available, but also must enable the operationalization of the curriculum including its priorities and balance. The time allocations described in this SCF should be seen as illustrative, and the actual time allocations must be conducted by schools, in accordance with their contexts and resources.

As mentioned in NEP 2020, care has been taken to ensure a reduction in the content load across Curricular Areas while designing the Learning Standards of OCF and shifting the focus from content-based learning to competency-based education and learning.

4.9.1 Key Considerations for Reduction of Content Load

The following three factors must be considered to rationalize and reduce the content load in some Curricular Areas:

a. Adequate time and space must be created for the development of conceptual understanding, and capacities, rather than mere rote learning which often occurs due to content overload.

b. Requisite space and time are needed for the new Curricular Areas, viz., Art Education, Physical Education, and Vocational Education. Often, which have earlier been considered 'co-curricular' and 'not important,'. In this SCF, they need proper time allocation.

c. The teaching time available in a working day for various Curricular Areas, and their distribution in a week's timetable is limited and poses a challenge to the achievement of content knowledge-based learning.

4.9.2 Reduction of Content Load in School Subjects

Science, the focus on essential capacities of scientific inquiry allows for rationalisation of content. The concepts are, therefore, chosen based on the opportunities they provide for developing these capacities, thus reducing content load.

Mathematics, whatever is specialised prerequisite knowledge for certain types of higher education needs has been moved out from the compulsory curricular content to the choice-based curriculum in the Secondary Stage, while retaining all concepts/areas that are foundational to the subject.

Social Science, the approach based on themes and levels ensures the learning of essential Competencies while reducing content load.

Language education, there are three languages to be learnt in school education through Grade 10. A range of literary Curricular Goals are transferable from a known language to the learning

of unfamiliar languages, and those that are specialised linguistic and literary goals have been moved to the choice-based Curricular Areas of the Secondary Stage, keeping only the core essential Competencies until Grade 10.

Foundational Stage

Young children enjoy using their free time to explore their immediate environment. The day needs to be carefully organised so that all Developmental Domains receive adequate time and attention. The organisation of the day is based on the institutional setting, the number of working days, and the number of daily working hours for each day. Each activity may be planned keeping in mind the attention span of the child. There may be a balance between child-initiated and Teacher-guided activities, group and individual or pair activities, and alternating activities. Art and Craft, Outdoor Play, and Free Play must have adequate time and focus in the day. Both the illustrations have a five-and-a-half-hour school day with about four-and-a-half hours of active instructional time for children of ages 4-6. Two illustrations are given below:

Illustration 1: Daily Routine for Ages 3–6

The first illustration is more appropriate in contexts where experiences such as Circle Time, Story Time, and Concept/Pre-numeracy Time are Teacher-guided, and Free Play and Corners Time are independent activities for the children.

From	To	Duration	Activity
Morning Routine/Free Play/Corners Time			
09:30 Hrs.	10:15 Hrs.	45 minutes	Circle time/Conversation
10:15 Hrs	10:30 Hrs	15 minutes	Snack Break
10:30 Hrs.	10:45 Hrs.	15 minutes	Rhyme/Song/Music/Movement
10:45 Hrs.	11:45 Hrs.	60 minutes	Concept Time/Pre-numeracy
11:45 Hrs.	12:15 Hrs.	30 minutes	Art/Craft/Free Play
12:15 Hrs.	13:00 Hrs.	45 minutes	Corners Time
13:00 Hrs.	13:45 Hrs.	45 minutes	Lunch Break (ages 3–4 go home)
13:45 Hrs.	14:30 Hrs.	45 minutes	Emergent Literacy/Story Time
14:30 Hrs.	15:00 Hrs.	30 minutes	Outdoor Play and Wind Up

Illustration 2: Daily Routine for Ages 3–6

The second illustration is more appropriate in contexts with fewer children and where there is a range of appropriate material available for them to use. Emphasis is on self-learning and children learn to use materials independently and with care.

From	To	Duration	Activity
Morning Routine + Silent Game			
09:30 Hrs.	10:15 Hrs.	45 minutes	Circle time (Conversation, Songs, Poems)
10:15 Hrs.	10:30 Hrs.	15 minutes	Snack Break
10:30 Hrs.	12:15 Hrs.	1 hour, 45 minutes	Work Time
12:15 Hrs.	13:00 Hrs.	45 minutes	Art/Craft/Free Play

13:00 Hrs.	13:45 Hrs.	45 minutes	Lunch Break (ages 3–4 go home)
13:45 Hrs.	15:00 Hrs.	1 hour, 15 minutes	Language and Emergent Literacy (ages 4-6)

Daily Routine for Ages 6–8

The daily routine for ages 6-8 would be slightly longer and a little more structured. While all Language classes for children 3-6 years can be handled together, for this age group dedicated time for each language is necessary. Specific blocks of time for literacy, numeracy, and art can be incorporated. R1 would need 90 minutes every day and R2 would need 60 minutes. Mathematics and numeracy would require 60 minutes a day. These periods of time can be organised into four blocks.

From	To	Duration	Activity
09:00 Hrs.	09:30 Hrs.	30 minutes	Circle time-Song/Movement
09:30 Hrs.	10:00 Hrs.	30 minutes	R1-Oral Language
10:00 Hrs.	10:30 Hrs.	30 minutes	R2-Word Recognition
10:30 Hrs.	10:45 Hrs.	15 minutes	Snack Break
10:45 Hrs.	11:45 Hrs.	1 hour	Mathematics
11:45 Hrs.	12:15 Hrs.	30 minutes	Art & Craft
12:15 Hrs.	12:45 Hrs.	30 minutes	R1-Reading/Writing
12:45 Hrs.	13:30 Hrs.	45 minutes	Lunch Break
13:30 Hrs.	14:30 Hrs.	1 hour	R2- Oral Language, Word Recognition
14:30 Hrs.	15:00 Hrs.	30 minutes	Play

Weekly Timetable for Ages 6–8

A longer day would allow more time for activities such as art, sports and gardening. The illustrative weekly timetable below allows for such possibilities. As mentioned earlier, Mathematics and R1 would include activities in blocks of time.

From	To	Monday	Tuesday	Wednesday	Thursday	Friday
09:00 Hrs.	10:00 Hrs.	Maths	Maths	R2	Math	
10:00 Hrs.	10:45 Hrs.	R1	R1	R1	R1	R1
10:45 Hrs.	11:00 Hrs.	Snacks				
11:00 Hrs.	12:00 Hrs.	R1	R1	R1	R1	R1
12:00 Hrs.	13:00 Hrs.	R2	R2	Maths	R2	R2
13:00 Hrs.	13:45 Hrs.	Lunch Break				
13:45 Hrs.	14:45 Hrs.	Art	Maths	Art	Art	Maths
14:45 Hrs.	15:30 Hrs.	Library	Gardening	Sports	Gardening	Sports

Considerations for Time Allocation across Preparatory, Middle, and Secondary Stages

1. The annual working year for schools has 220 school-going days after taking into consideration national holidays, term breaks, and vacations.
2. Of these 220 days, around 20 days may be considered for assessments and other assessment-related activities across Stages.
3. Another 20 days may be set aside for school events and other similar activities in schools. The ten bagless days mandated by NEP 2020 can come from these 20 days spread across the year for the Middle and Secondary Stage students.
4. Thus, a safe estimate can be of 180 days of instruction time across these three Stages at school.
5. Given the wide range of contexts in which schools operate, a working school week has been taken as five and a half days (with Saturdays as half working days).
6. Since not all Saturdays are likely to be working for all students, the model here has considered five and a half days of school every alternate week only.
7. Given the range of subjects in the different Stages and the reasonable number of hours students can spend in school, a working school year would have around 34 working weeks of around 29 hours of instruction hours every week.
8. The exact timings and order of subjects may be chosen to be the same each day (e.g., Language and Mathematics in the morning after a nutritious breakfast) in order to establish a daily rhythm for students; or they may be varied on a weekly basis.

Ten Bagless Days

Every student will take a fun course, during Grades 6-8, that gives a survey and hands-on experience of important vocational crafts, such as carpentry, electric work, metal work, gardening, pottery making, etc., as decided by States and local communities. A practice-based curriculum for Grades 6-8 will be appropriately designed by SCERT. All students will participate in a 10-day bagless period sometime during Grades 6-8 where they intern with local vocational experts such as carpenters, gardeners, potters, artists, etc. Similar internship opportunities to learn vocational subjects may also be made available to students throughout Grades 6-12, including holiday periods. Bagless days will be encouraged for various types of enrichment activities involving the arts, quizzes, sports, and vocational crafts. Children will be given exposure to activities outside school through visits to places of historical, cultural, and tourist importance, meeting local artists and craftsmen and visits higher educational institutions in their locality.

Learning in school will not be limited to the experiences in the classroom. Provisions will be made in the annual calendar of schools for ten bagless days in the Middle and Secondary Stages where students will not have to carry their books to school and use that time valuably in learning from local professionals. The illustrative timetable given here in this SCF has accounted for these ten bagless days in the twenty days kept aside for school events.

Time Allocation for the Preparatory Stage

1. Weekdays begin with an assembly for 25 minutes with 05 minutes to reach the classroom.
2. Class time for all subjects is 40 minutes; and some subjects will require a block period of 80 minutes.
3. The transition time for students to prepare for the next class is 05 minutes.
4. The two working Saturdays a month have a slightly different schedule compared to other working weekdays. No assembly on Saturdays.
5. A snack break of 15 minutes and a lunch break of 45 minutes has been built in (see the illustrative timetable) on weekdays. Lunch is 30 minutes on Saturdays.
6. R1 Language has Curricular Goals for the Library built into it in the design of Learning Standards. Therefore, the time is shared between these two subjects on the timetable.
7. Languages (R1 and R2 together) have been given adequate time for students to become independent readers and writers in these, as the basis of learning other Curricular Areas.
8. R2 has been given more time than R1 as gaining proficiency in the language by the end of this Stage will require additional time. Also, all other Curricular Areas are taught in the language of R1 and so add to the learning of R1.
9. The World Around Us (TWAU) has also been given adequate time as the Preparatory Stage is a developmentally critical time to learn essential multidisciplinary skills of inquiring about and learning from the world around the students.
10. Art Education and Physical Education (PE) have been given a fair share of their time considering the Learning Standards built into this Curriculum Framework.

Preparatory	Annual Hours	Annual Periods
R1 + Library	180	270
R2	190	285
Mathematics (Maths)	185	277.5
The World Around Us (TWAU)	200	300
Art Education (Art)	100	150
Physical Education (PE)	100	150

Illustrative time table for the Preparatory Stage

Time (Hrs)	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
8:30-8:55	Assembly	Assembly	Assembly	Assembly	Assembly	830-910	TWAU
9:00-9:40	R1	R1	R1	R1	R2	915-955	TWAU
9:45-10:25	R1	Library	R1	Library	R2	955-1015	Snack break
10:30-10:45	*Snack break*	*Snack break*	*Snack break*	*Snack break*	*Snack break*	1020-1100	R2
10:50-11:30	Maths	Maths	R2	Maths	Maths	1105-1145	Art

11:35-12:05	Maths	Maths	R2	Maths	Maths	1150-1230	PE
12:05-12:50	*Lunch*	*Lunch*	*Lunch*	*Lunch*	*Lunch*	1230-1300	Lunch
12:50-13:30	TWAU	R2	TWAU	R2	TWAU		
13:35-14:15	TWAU	R2	TWAU	R2	TWAU		
14:20-15:00	PE	Art	Art	TWAU	PE		
15:05-15:45	PE	Art	Art	TWAU	PE		

Time Allocation for the Middle Stage

1. The weekday begins with an assembly for 25 minutes with 05 minutes to reach the classroom.
2. Class time for all subjects is 40 minutes. Some subjects will require a block period of 80 minutes (1 hour 20 minutes) for activities, lab work, etc.
3. The transition time for students to prepare for the next class is 05 minutes.
4. The two working Saturdays a month have a slightly different schedule compared to other working weekdays. No assembly on Saturdays.
5. A snack break of 15 minutes and a lunch break of 45 minutes has been built in (see the illustrative timetable) on weekdays. Lunch is 30 minutes on Saturdays.
6. R1 Language has Curricular Goals for the Library built into it in the design of Learning Standards. Therefore, the time is shared between these two subjects on the timetable.

Middle	Annual Hours	Annual Periods
R1 + Library	65	97.5
R2	70	105
R3	75	112.5
Mathematics (Maths)	115	172.5
Science	160	240
Social Science (SS)	160	240
Art Education (Art)	100	150
Physical Education (PE)	100	150
Vocational Education (VE)	110	165

Illustrative Time Table for the Middle Stage (Two Working Saturdays)

Time (Hrs)	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
8:30-8:55	Assembly	Assembly	Assembly	Assembly	Assembly	830-910	Library
9:00-9:40	R1	Maths	Maths	Maths	Maths	915-955	Library
9:45-10:25	R2	R2	R1	Maths	R1	955-1015	Snack break
10:30-	*Snack*	*Snack*	*Snack*	*Snack*	*Snack*	1020-	VE

10:45	*break*	*break*	*break*	*break*	*break*	1100	
10:50-11:30	SS	SS	SS	SS	SS	1105-1145	Art
11:35-12:05	SS	Science	SS	Science	Science	1150-1230	PE
12:05-12:50	*Lunch*	*Lunch*	*Lunch*	*Lunch*	*Lunch*	1230-1300	Lunch
12:50-13:30	Science	Art	Science	Art	R2		
13:35-14:15	Science	Art	Science	Art	R3		
14:20-15:00	PE	VE	R3	PE	VE		
15:05-15:45	PE	VE	R3	PE	VE		

Time Allocation for the Secondary Stage (Grades 9 & 10)

1. The weekday begins with an assembly for 25 minutes with 05 minutes to reach the classroom.
2. Class time for all subjects is 50 minutes. Some subjects will require a block period of 100 minutes (1 hour 40 minutes) for hands-on work, activities, lab work, and other such pedagogic requirements.
3. The transition time for students to prepare for the next class is 05 minutes.
4. The two working Saturdays a month have a slightly different schedule compared to other working weekdays.
5. A lunch break of 55 minutes has been built in (see the illustrative timetable) on weekdays and 30 minutes on Saturdays.
6. There is an optional 'Additional Enrichment Period' (AEP) every evening and on the two working Saturdays after class. This is for students to use as additional time for enrichment in any subject of the curriculum. In Curricular Areas such as Art Education, Physical Education and Well-being, and Vocational Education, extended time for group/team practice, interschool competitions, subject clubs, etc. can be facilitated by the school in AEP if students choose to participate.

Secondary	Annual Hours	Annual Periods
R1	70	84
R2	70	84
R3	70	84
Mathematics (Maths)	135	162
Science	135	162
Social Science (SS)	125	150

Interdisciplinary Area (IDA)	125	150
Art Education (Art)	115	138
Physical Education (PE)	90	108
Vocational Education (VE)	110	132

Illustrative time table for the Secondary Stage (Grades 9 & 10)

Time (Hrs)	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday (2)	
08:00-08:25	Assembly	Assembly	Assembly	Assembly	Assembly	8:00-8:50	SS
08:30-09:20	R1	R2	Maths	R2	R1	8:55-9:45	IDA
09:25-10:15	Maths	Maths	Maths	Maths	R3	9:50-10:40	R2
10:20-11:10	Art	Science	Science	Science	Art	10:45-11:35	R3
11:15-12:05	Art	PE	Science	Science	Art	11:40-12:30	R1
12:05-13:00	*Lunch*	*Lunch*	*Lunch*	*Lunch*	*Lunch*	12:30-13:00	Lunch
13:00-13:50	SS	SS	SS	SS	SS	13:05-13:55	AEP*
13:55-14:45	IDA	VE	PE	VE	IDA		
14:50-15:40	IDA	VE	PE	VE	IDA		
15:45-16:35	AEP*	AEP*	AEP*	AEP*	AEP*		

**AEP = Additional Enrichment Period*

Key Takeaways

1. Ensure a reduction in the content load across Curricular Areas while designing the Learning Standards and shifting the focus from content-based learning to competency-based education and learning.
2. Art and Craft, Outdoor Play, and Free Play must have adequate time and focus in the Foundational Stage. In Preparatory, Middle, and Secondary Stages, the annual working days for schools will be 220 school-going days, including 20 days for assessment-related activities and another 20 days for school events, after taking into consideration national holidays, term breaks, and vacations. Thus, instruction time across Preparatory, Middle, and Secondary Stages will be of 180 days.
3. Requisite space and time are needed for the new Curricular Areas, viz., Art Education, Physical Education, and Vocational Education.

4. All students will participate in a 10-day bagless period during the Grades 6-8 where they intern with local vocational experts such as carpenters, gardeners, potters, artists, etc.; and similar internship opportunities to learn vocational subjects will also be made available to students throughout Grades 6-12, including holiday periods. Students will not carry their books to school on these days.

Section 4.10
Subjects in Grades 11 and 12

The Secondary Stage is to be designed in two phases- Grades 9 and 10, and Grades 11 and 12. In Grades 9 and 10, students will be engaged with a breadth of curriculum while in Grades 11 and 12, more specializations and choices are to be made available to students while maintaining significant breadth. The Secondary stage of class 11 and 12 will be multidisciplinary in nature in which the students will have the option to choose the subjects as per her/his interest. The pedagogical structure will be flexible and interactive to develop critical thinking among the students. Depth of study will not come from loading an excessive load of content on to the student. The content must be 'just enough' and appropriate to give an understanding of the most important conceptual structures and paradigms in the subject to the key questions in the subject and the nuances of methods of enquiry. The expectation must be that having studied the subject in Grades 11 and 12, students should be able to pursue it further, independently or in a higher education institution.

NEP 2020 gives clear mandate to move away from the current practice of streaming into science, arts or humanities, and commerce. Instead, students can choose subjects across Curricular Areas. Thus, the Secondary Stage design should enable both breadth through engagement with a variety of subjects across streams including Art Education, Physical Education and Well-being, and Vocational Education, as well as depth in areas chosen by students. Students should have flexibility and choice across subjects and Curricular Areas. 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. While selecting the content, Odisha's rich cultural heritage, arts, history, literature, science, entrepreneurship, must be taken into consideration.Board exams will also be made 'easier', in the sense that they will test primarily core capacities or competencies rather than months of coaching and memorisation.

4.10.1 Generic Curricular Goals

Students will develop an understanding of the subject, including its key conceptual structures, paradigms, range of questions, most contemporary issues and subfields of study, and methods of inquiry at a level of depth that enables them to pursue the study of the subject independently or in higher education. Illustrative examples of possible combination are given in the NCF-SE, 2023 (pp. 476-511) for different subject areas. The following two sub-sections present illustrative examples from History and Biology, respectively, derived from NCF-SE, 2023:

4.10.1.1 Illustration 1: History

Principles for Designing Courses

The aim of teaching History is to inculcate a historical sensibility about the past while acquiring disciplinary understanding and knowledge. The courses for History will be designed keeping

the following in mind:

- Students will examine the Indian subcontinent from a historical lens spanning from prehistory and early history to the birth of the nation.
- They will receive a strong grounding in the substantive content of Indian History while remaining aware of India's place in the world.
- They will engage with perspectives on the emergence of modernity across the world, with a specific focus on key transformations in Europe.
- They will understand the impact of events that occurred in one part of the world on other parts of the world over a period of time.
- They will acquire the methods of history including the interpretation of literary texts and the methods of archaeology.

Illustrative Courses

Content Area 1: Ancient World

This content area will cover the earliest population of the Indian subcontinent, followed by the spread of agriculture in the fertile crescent and South Asia, and the emergence of the earliest known cities and city-based civilisations in Mesopotamia, Egypt, and the Indian subcontinent. Methodologically, students will be introduced to the basics of the archaeological and historical methods and will learn to interpret early literary texts, as well as material culture to produce a historical narrative.

Content Area 2: States and Empires in India

Through this content area, students will be introduced to various kinds of large and complex political formations in India from about the 5th century to the 16th century. They will learn about the formation of more centralised state systems than those that existed in the previous periods. They will critically examine the nature of these states, especially the structures of power and levels of control over diverse geographies and communities.

Content Area 3: Towards Modernity

Through this content area, students will be introduced to the emergence of modernity, as a temporal period and a concept, especially in the context of Europe. They will engage with the transformations to modern cultural, State, and economic institutions in Europe. While the content area will focus on key historical transformations in Europe, it will also consider the impact these transformations had on the rest of the world, especially in America, Africa, and Australia.

Content Area 4: Birth of the modern Indian Republic

Through this content area, students will chart the emergence of colonial rule in India, from the 16th century, when the first European joint stock trading company arrived in India, to the birth of the modern nation-state in 1947, extending the moment of this birth up to the integration of princely States and the adoption of the Constitution by our Republic in 1950. Students will be introduced to the vast administrative, educational, and social reforms that were introduced

during the colonial period. Finally, students will discuss India's freedom struggle, including not only its well-known figures but also some lesser-known figures.

4.10.1.2 Illustration 2: Biology

Principles for Designing Courses

The aims of teaching Biology are for students to explore the subject at different scales, and have an appreciation for the process of science, and the progression of scientific ideas. Students will develop the capacity to engage more deeply with any area in the discipline. The courses for Biology must be designed keeping the following in mind:

- Students will be able to see the integration of different fields of biology and highlight the interconnections between these fields.
- They will develop capacities for observation, documentation, and familiarity with quantitative reasoning and multi-disciplinary approaches.
- They will engender sensitivity towards biological issues (environment, health) in their surroundings and be aware of how citizens can contribute to their local communities and to science.
- They will be aware of bioethical concerns that arise in biology today.
- They will also be exposed to diverse careers in the life sciences.

Illustrative Content Areas in Biology

Content Area 1: Biodiversity and Biogeography of India

Through this content area, students will be given an overview of the scope of life sciences, the various length and time scales at which biological phenomena occur, and the methods employed by scientists to investigate these phenomena. Students will be encouraged to think like a scientist by using case studies from India. They will develop an appreciation for natural history, and an understanding of biodiversity and the factors which affect the richness and diversity of life in different regions. A broad exposure to biodiversity in India will be complemented by a deeper exploration of biodiversity in their local region, and an introduction to systematic practices of studying biodiversity through taxonomy and nomenclature.

Content Area 2: The Unity of Life

Through this content area, students will engage with the common structures and processes that underpin all of biology. This area will include a discussion of cell theory and our current understanding of cellular structures and processes. Subsequently, students will explore important classes of molecules that are constituents of cells and the functions they perform. In this context, students will learn about the identification of DNA as genetic material. Case studies (e.g., antimicrobial resistance) will be used to illustrate the importance of an integrated understanding of biological systems in modern life sciences. Students will become familiar with concepts that are essential to study any biological system.

Content Area 3: Organismal Biology

Through this content area, students will explore many aspects of the biology of non-human organisms (microbes, fungi, plants, animals) using an evolutionary framework. Representative examples of development and simple illustrations of the genetics of the body will be given, along with a small set of topics related to the physiology and anatomy of plants and animals. Topics in ecology and the biology of food production will be covered, including population, community and behavioural ecology, energy flows, and the interaction between different species. A diverse set of examples (spanning the tree of life) will be used to illustrate concepts. Students will be encouraged to draw connections between food security challenges, and physiological and ecological constraints.

Content Area 4: Agriculture and Animal Husbandry

Through this content area, students will explore commercially important organisms along with some examples of the developmental biology, anatomy, and physiology of these organisms. The role of breeding and biotechnology will be discussed followed by ecological and environmental constraints and challenges to food production. Students will study the topic of disease management and the possibilities of biocontrol. They will recognise why an understanding of physiology and an ecological sensibility is essential for sustainable food production.

Content Area 5: Human Biology

Through this content area, students will explore the evolutionary history of the genus Homo and the human genome project. Thereafter, they will learn about major organ systems in a manner that connects with discussions of the genome, and concepts of physiology and evolution, as well as health and well-being. After discussions on the importance of diet and nutrition, an overview of communicable and non-communicable diseases will be provided. Given the age group, concerns of reproductive health, mental health, substance abuse, and addiction will be explored. Students will be made aware of many careers related to human health. They will also explore the connection between individual health and planetary health, and why one must view health from a community perspective rather than just an individual one.

4.10.2 Approaches to Subject Selection

Grades 11 and 12 will enable depth of study based on choices that students make. Students will have to:

1. Choose two Languages from Group 1, at least one of which is native to India.
2. Choose four subjects, with an optional fifth subject, from at least two of the following groups:
    i. Group 2: Art Education, Physical Education and Well-being, Vocational Education
    ii. Group 3: Social Sciences and Humanities, Interdisciplinary Areas
    iii. Group 4: Science, Mathematics and Computational Thinking

Group 1	Group - 2

Languages	Art Education	Physical Education & Well Being	Vocational Education
1. Languages native to India (Compulsory) 2. Other languages (compulsory) 3. Modern Indian languages 4. Classical languages 5. Foreign languages	1. Indian classical music 2. Folk music 3. Contemporary music 4. Theatre 5. Puppetry 6. Sculpture 7. Fine arts 8. Folk painting 9. Graphic Design 10. Motion pictures 11. Photography 12. Textile Design 13. Chhau Dance 14. Drama 15. Flute 16. Hindustani Violin 17. Hindustani Vocal 18. Odissi Dance 19. Odissi Vocal 20. Sitar 21. Tabala	1. Yoga and lifestyle 2. Sports and Nutrition 3. Physical Education for students with disabilities 4. Biomechanics and Sports	1. Agriculture – Cereal Production 2. Agriculture – Seed production 3. Gardening 4. Automobile Servicing 5. Machining 6. Electronics 7. Community Health 8. Accounting Services 9. Data Entry & Management 10. Retail Services 11. Textile & Garments 12. Entrepreneurship 13. Graphic Art 14. Painting 15. Building maintenance 16. Audio-visual maintenance 17. Fishery 18. Dairying 19. Poultry farming 20. Banking and insurance 21. Salesmanship 22. Sericulture 23. Business economics 24. Catering and restaurant management 25. Creche and pre-school management 26. Travel and Tourism management 27. Solar panel installation 28. Smartphone technician 29. Repair and maintenance of

			Electrical domestic appliances

Group - 3	Group - 4		
Social Sciences	**Interdisciplinary Areas**	**Mathematics and Computational Thinking**	**Science**
1. History 2. Geography 3. Political science 4. Psychology 5. Psychology and Mental Health 6. Economics 7. Sociology 8. Philosophy 9. Anthropology 10. Education 11. Development economics 12. Home Science	1. Business Studies 2. Accounting 3. Sustainability and climate change 4. Journalism 5. Indian Knowledge Systems 6. Legal studies 7. Statistics 8. Environmental Education 9. Disaster Management 10. Education for Sustainable Development	1. Mathematics 2. Computer Science 3. Business Mathematics 4. Advanced Mathematics 5. Probability and statistics 6. Information technology 7. Basic Computer Education	1. Physics 2. Chemistry 3. Biology 4. Earth sciences 5. Astronomy 6. Modern physics 7. Biotechnology 8. Electronics

Key Takeaways

1. Move away from the current practice of streaming into science, arts or humanities, and commerce. Instead, students can choose subjects across Curricular Areas. The Secondary Stage design should enable both breadth through engagement with a variety of subjects across streams as well as depth in areas chosen by students. Students should have flexibility in choosing subjects across Curricular Areas.
2. 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.
3. While selecting the content, Odisha's rich cultural heritage, arts, history, literature, science, entrepreneurship, must be taken into consideration.
4. Board exams will be made 'easier', in the sense that they will test primarily core competencies rather than months of coaching and memorisation.

5. At Grades 11 and 12, students will have to choose two Languages from Group 1, at least one of which is native to India; and four subjects, with an optional fifth subject, from at least two of Groups 2, 3 and 4.

Chapter 5

Pedagogy and Learning Assessment

The two critical aspects of education, namely Pedagogy and Learning assessment, are at the heart of formal school system. This chapter outlines the systematic approaches and techniques for effective pedagogy and assessment mechanisms, including learning processes, responsive to the socio-cultural ethos of Odisha. It envisages necessary flexibility on the part of school education system in Odisha for implementing both the approaches.

5.1 Approaches to Pedagogy

Broadly, the term pedagogy refers to the philosophical framework underlying teaching-learning process.: the art and science of teaching for learning; the lens in which we plan, carry out and reflect on our teaching; and a deliberate attempt at improving the learning process by considering the nature of the learner, contents, methods, media, and other aspects of the environment. Theories of learning from the basis for pedagogy. The effective pedagogy is based on a good understanding of how children grow and learn, and a clear focus on the Curricular Goals, Competencies, and Learning Outcomes to be achieved by students. The NEP 2020 provides a very comprehensive explanation of effective pedagogy for educational institutions (pp 99-129).

> *A good educational institution is one in which every student feels welcomed and cared for, where a safe and stimulating learning environment exists, where a wide range of learning experiences are offered, and where good physical infrastructure and appropriate resources conducive to learning are available to all students.*
>
> *[NEP 2020, Principles]*

Research conducted across the world on how children learn reveals that the aspects such as brain, emotions, learning environment, and socio-cultural environment, have practical implications for teaching and learning. Moreover, ancient Indian scriptures as well as the current cognitive science research indicate that memory (*smriti*), including both working memory and long-term memory, practice, and questioning play an important role in cognition and comprehension, and thereby in the achievement of valuable knowledge, capacities, values, and dispositions by students. The key elements of effective pedagogy in the classroom are as follows:

a. Ensuring respect and care for children.
b. Building positive teacher-student relationships through different means.
c. Providing systematic support to students by experienced students or adults.
d. Using differentiated instruction to address the needs of students with varying interests and capabilities for better learning.
e. Providing opportunities for independent and collaborative work.
f. Using varied resources such as textbooks and other resources and materials beyond the textbook.
g. Helping students develop appropriate work habits and responsibility.
h. Giving meaningful and immediate feedback to students.

5.2 Learning Through Senses and Perceptions

For most children, learning is enriched through multi-sensory engagement that supports the formation of strong mental connections and deeper comprehension. However, for children with sensory impairments (visually impaired, speech and hearing impaired, slow learners, autistic, children with speech and language disability, cerebral palsy or multiple disabilities) the absence or limitation of one or more senses presents unique learning challenges. These children may rely more heavily on their remaining senses or require specific adaptations and assistive technologies to access information and participate meaningfully in learning processes. It is, therefore, essential that an effective pedagogy recognizes the diverse sensory experiences of all learners and promotes inclusive strategies, such as tactile materials, visual aids, sign language, and sensory stimulation techniques, that cater to the varied perceptual needs of children with special needs. An inclusive learning environment must consciously accommodate these differences to ensure every child has an equal opportunity to grow, connect, and thrive.

5.3 Effective Pedagogy

The central aim of education is the achievement of valuable knowledge, capacities, values, and dispositions by students. Some key elements of effective pedagogy for achieving these aims are as follows:

Knowledge: Children learn new concepts, theories or principles, fit them into their existing knowledge structure and adjust their existing knowledge to allow new experiences in. In this process, teachers need to sequence the teaching of concepts; connect new concepts to students' existing experiences and understanding; pose questions that challenge their existing understanding; and push their thinking beyond their existing understanding. All these happen through their participation in open discussions and hands-on activities.

Capacities: Capacities or abilities and skills are developed best by doing and practice. Good practice involves meaningful variety of experiences which must be acquired in appropriate quantity and is supplemented with continuous discussions on why certain procedures work and others do not. Most teachers, although are of the opinion that drill or practice is boring, yet it is the only way for students to master certain procedures. The problem arises when drill is taken

as a substitute for understanding. The fact is that practice *alone* cannot lead to knowledge; and understanding *alone* cannot lead to mastery of a procedure.

Values and Dispositions: Telling students about what values they should develop or uphold has little effect. Development of values and dispositions in school education happens *inter alia* through school and classroom culture and practices, learning through school subjects, marking important days for community service, and regular practices at the school assembly.

5.3.1 Overall Principles of Effective Pedagogy

Effective pedagogy encourages active discovery, questioning and debating, conceptual understanding, and independent learning. It gives serious consideration to student experiences and student voices, acknowledges and accommodates student diversity, builds on students' previous knowledge, uses a range of teaching-learning techniques, and gives timely feedback on work done. Therefore, educators need to keep in mind a set of principles of pedagogy, and strictly adhere to a set of non-negotiable aspects in classroom and instructional planning across all Stages of education.

Principles of Pedagogy

- Learning is an active process.
- Children learn best when they are respected, valued, and involved in the learning process.
- Children learn in a variety of ways.
- Learning happens best when classroom process is connected with the life of students.
- Practice is critical and integral to learning process.

Non-negotiable Aspects

- Punishment and fear
- Inequity in the classroom on the basis of caste, gender, religion, socio-economic conditions, disability, or student performance.
- Memorisation as the primary form of assessment.
- Students as passive recipients of information

5.3.2 Experiential Learning

The NEP 2020 highlights experiential learning as a pedagogic tool. It is a dynamic approach to education that emphasises learning by doing, allowing students to engage with contents at a deeper level. It seeks to engage students in hands-on experiences and reflection. It, *inter alia,* includes, arts-integrated and sports-integrated education, story-telling-based pedagogy as standard pedagogy within each subject, and with explorations of relations among different subjects.

5.3.3 Using Differentiated Instruction

An effective pedagogy in the classroom embraces the diversity of learners, including children

with disabilities, by creating a supportive and respectful environment. Teachers can foster inclusion by using differentiated instruction, adapting teaching methods to suit varied learning styles and abilities, and ensuring that all children can participate actively. This involves using multiple formats like visuals, tactile materials, and audio aids, and encouraging peer support and collaborative learning. Teachers should also promote positive attitudes by recognizing each child's strengths, challenging stereotypes, and encouraging empathy among students. Celebrating differences and making children feel valued for who they are strengthens both learning outcomes and classroom harmony.

5.3.4 Support Systems for Children with Special Needs

In an inclusive classroom, multiple support systems can work together to ensure meaningful learning and participation of children with special needs. Assigning a peer buddy helps promote friendship, emotional security, and peer-assisted learning. Alongside this, the presence of a shadow teacher can provide individualised assistance during classroom activities, helping the child stay engaged and on track. Special educators play a critical role in designing personalised learning plans, adapting curriculum, and guiding classroom teachers in inclusive practices. In addition, resourceful and involved parents can offer valuable insights into the child's needs and strengths, making home-school collaboration more effective. Together, these supports create a responsive and inclusive learning environment that celebrates diversity and helps every child thrive.

5.4 Planning for Teaching

Teaching is a deliberate act carried out with the intention of bringing about learning in students. Therefore, planning is central to good teaching. It, *inter alia*, includes construction and organisation of classroom tasks as per Competencies and Learning Outcomes, pedagogy, resources to be used, assessment mechanism, support activities for students, and home assignments. Good planning requires understanding of Aims of Education, Curricular Goals, Competencies, and Learning Outcomes, along with previous learning of the students and available TLMs and content to be used, outcomes to be achieved, pedagogy to be followed, resources to be used, and assessment to be carried out. Planning also includes support activities for students, home assignments, and displays in the class relevant to what is being taught.

Components of a Teaching Plan

- Competencies, Learning Outcomes, and Lesson objectives
- Activities to be performed by students and teachers
- Prior understanding of the student
- Content and material to be used
- Duration and sequence of activities
- Classroom arrangements
- Specific strategies for CwSN
- Methods of assessment

Teaching needs to be well planned and a deliberate act to bring about learning in students. The core principles of teacher's pedagogy, *inter alia,* include: commitment to students and learning, knowledge base on subject areas, knowledge of how to teach those subjects, knowledge of ICTs and their usage, managing and monitoring student learning, thinking systematically about his practices, learning from experiences, and becoming member of

learning communities.

The NEP 2020 emphasises the holistic development of the learners, which requires using innovative pedagogical approaches such as experiential learning, cutting edge pedagogy, art-integrated learning, flipped classroom, etc. Pedagogical practices determine the learning experiences arranged for the learners, thus directly influencing their learning outcomes. Therefore, the use of relevant pedagogy is necessary to achieve the objectives of the curricula successfully.

Box 5a

Panchpadi: Five-Step Learning Process

The five-step learning process: *Panchpadi*, that contains all the components of a lesson plan, is a good guide for a teacher to adopt in planning for instruction:

Adhiti (Introduction)*:* In the first step, the teacher introduces a new concept/topic based on the child's prior knowledge. Children gather relevant information regarding the new topic by asking questions, exploring, and experimenting with ideas and materials.

Bodh (Conceptual Understanding): Children try to understand core concepts through play, inquiry, experiment, discussion, or reading. The teacher observes the process and guides the children.

Abhyas (Practice): This step is about practice to strengthen understanding and skills through different activities like group work or projects for the attainment of Competencies.

Prayog (Application): This step involves applying the understanding in the child's everyday life through various activities and projects.

Prasar (Expansion): This step envisages spreading the acquired understanding (*pravachan*) and to learn further (*swadhyay*). Sharing and enhancing knowledge strengthens our learning. Learning is incomplete, if we do not teach what we have learnt. Teaching makes learning clear and long-lasting.

Assessment as a part of pedagogy plays an important role in providing the desired feedback and direction to the pedagogical processes. It gathers feedback about each learner based on reflections of the student, peers, parents and teachers. This indicates the effectiveness and impact of the ongoing teaching-learning processes along with the gaps too. Accordingly, the teacher redesigns own pedagogic strategies to address the gaps and emerging issues related to student learning appropriately.

5.5 Addressing the Needs of Students with Disability

Classroom processes should address the diverse needs of students with disability or with individual learning needs. Therefore, teachers need to understand the learning needs of every student and provide appropriate support to each student. Some of the approaches to provide additional support to these students include: introducing bridge course at the beginning of the year to enable students to refresh their knowledge and prepare for the new class; providing differentiated assignments/tests of varying levels of difficulty using the same content; making needed resources available to students; setting up a conference time once a month or so with

every student; and communicating with parents whose wards need special help and support, etc.

Specific Strategies for Students who Need Extra Help

- Children with blood disorders: Stress free, well ventilated, cool rooms
- Children with learning disorders: Classroom lesson notes in advance, breaking down tasks into smaller steps, using visual aids, and incorporating multisensory instruction.
- Children with visual impairment: Audio and Braille notes, audio description in videos
- Children with hearing impairment: Sign language interpreter
- Children with intellectual disability: Breaking down tasks, using visual aids, and providing clear, concise instructions.
- Children with autism: Visual aids, structured routines, and clear communication strategies.
- Children with cerebral palsy: Inclusive and accessible learning environment, e.g., making physical adjustments, accessible seating, providing assistive technology.

5.6 Approaches to Assessment

The major objective of the assessment is to identify learning needs of children to allow them to build on their strengths and support them to overcome the gaps in learning. It is not just to measure what children can recall, what was taught, but it is also to see, whether it is translated into holistic learning and development of learners. Taking cognizance of this objective, the Program of Action (POA), 1992, and all the National Curriculum Frameworks (NCFs), developed subsequently, recommended an evaluation system integral to the teaching to adopt a learning process to avoid anxiety, harassment, and humiliation to children. In order to be holistic, assessment needs to be multiple-evidence based and requires collecting information from various sources on different aspects of learning, i.e., knowledge, performance, skills, interests, attitude and motivation. This helps teachers to understand the learning needs of each child, thereby to modify their teaching-learning activities and processes. It involves students as partners in planning, transaction, and assessment of the teaching-learning process. Thus, assessment enhances a child's confidence and helps in developing her/his abilities for lifelong learning. Moreover, it provides comprehensive information regarding the extent of student learning on all aspects of the curriculum, including

Assessment of learning, for learning, and as learning

Assessment of learning refers to criteria-based comprehensive assessment that provides information regarding the student learning outcomes against curricular objectives. It is used to benchmark students' learning against criteria (e.g., Skills, Learning Indicators, Learning Outcomes), and to share learning progress with the stakeholders.

Assessment for learning refers to evidence of student learning gathered by the teacher that provides inputs to guide the teaching-learning processes. It is integral to teaching-learning and occurs continuously during teaching learning process. It is school-based and relies on data collected from the activities of the child both inside and outside the classroom.

Assessment as learning refers to a process in which learners can play an active role in taking charge of their own learning and also are encouraged to reflect on peer and group work. It places the onus of learning on different stakeholders, e.g., parents, children, teachers, principal.

performance in different subject areas, skills, interests, attitudes, and motivation in a holistic manner without segregating into compartments of curricular and extra-curricular areas.

The National Education Policy (NEP)-2020 considers assessment as an integral part of the teaching-learning process and recommends that the aim of assessment in the culture of our schooling system would shift from being only summative to one that is more regular and formative, more competency-based, promotes learning and development of students, and tests higher-order skills. It envisages that the primary purpose of the assessment would be for learning; it would help the teacher and student, and the school system, revise teaching-learning processes so as to optimize learning and development for all students at all levels of education (NEP 2020, para 4.34, pp. 17). The policy further states that the progress card of all students for school-based assessment would be completely redesigned by the respective States/UTs under guidance of the proposed National Assessment Centre,

The NCERT, and SCERTs will develop Progress Cards which would be a holistic, 360-degree, multidimensional report that would reflect in great detail the progress as well as the uniqueness of each learner in the cognitive, affective, and psychomotor domains. It will include self-assessment and peer assessment, the progress of the child in project-based and inquiry-based learning, quizzes, role plays, group work, portfolios, etc., along with teacher assessment (NEP 2020, para 4.35, 17-18).

5.6.1 Key Principles of Effective Assessment

Limitations of current practices of assessment including its rigid and narrow framework, and emphasis on quantitative achievement in terms of marks, puts a lot of pressure on students, promotes rote memorization instead of understanding, critical thinking, analysis, conceptual clarity, and innovation. In order to address these challenges in learning assessment, NCF-SE, 2023 recommends that examinations should move away from testing rote memorisation and instead, focus on conceptual understanding, application of concepts, problem solving abilities, critical thinking, and other such capacities. It has identified the following key principles of effective assessments:

i. Assessment should measure achievement of Competencies and Learning Outcomes leading to attainment of Curricular Goals.
ii. Assessments should be constructive, developmental, an ongoing process and learning focussed.
iii. Assessments should be Stage appropriate.
iv. Assessments should accommodate student diversity.
v. Assessments should be supported by timely, credible, and constructive feedback to students.
vi. Assessments could be both formative and summative for improving teaching and learning.
vii. Different forms of assessment such as Written Tests, Oral Tests, Practical Tests, and Open-Book Tests can be used across both formative and summative assessments.

5.6.2 Holistic Progress Card

As a part of transforming assessment for student development, the para 4.35 of the National Education Policy (NEP) 2020 recommends preparation of Holistic Progress Card (HPC) to provide a 360-degree, multidimensional report of progress, that not only reflects in detail the progress as well as the uniqueness of each learner in the cognitive, affective, socio-emotional, and psychomotor domains. It will include self-assessment and peer assessment, and progress of the child in project-based and inquiry-based learning, quizzes, role plays, group work, portfolios, etc., along with teacher assessment. The HPC will form an important link between home and school and will be accompanied by parent-teacher meetings in order to actively involve parents in their children's holistic education and development. The progress card would also provide teachers and parents with valuable information on how to support each student in and out of the classroom.

5.6.3 Approach to Board Examinations

The current practice of Board examinations causes severe stress in students and their parents for a variety of reasons. Board examinations conducted at the end of Grades 10 and 12 are certification examinations to ascertain the extent to which students have achieved competencies across curricular areas leading to the attainment of Curricular Goals. Most Board examinations struggle to do this well in a meaningful and consistent manner.

Board examinations tend to focus on the capacity of students to reproduce learnt facts. There is a misalignment between what these examinations should test and what they do test. Given that most examinations largely test rote memory, a very narrow range of Competencies are assessed. This gives an incomplete and/or incorrect picture of student learning. Most test instruments are not backed by clear and detailed marking schemes, which leads to subjectivity by evaluators and questions of consistency. Thus, there remain serious concerns over the validity and reliability of these tests at the current time.

5.6.4 Changes to be Made in Board Examinations

Following are the main changes to be made in the system aligned with NEP 2020:

1. Board examinations will be conducted for Grades 10 and 12. However, all students will take school examinations in Grades 3, 5, and 8, which would preferably be school-based;
2. There will be a single body, namely "Board of School Education, Odisha", which would conduct all the Board Examinations (External Examinations) will be.
3. Board examinations will be redesigned to encourage holistic development, allowing students to choose many of the subjects in which they will take Board exams;
4. The burden of Board examinations on students must be reduced through multiple actions:
    - Making them easier and lighter with significantly reduced content load;
    - Focusing sharply on competencies rather than recounting facts;

- Offering the same examination at least twice a year, so that students have an option to take the exam a second time and improve; and
- All Boards would change to semester or term-based systems, where students can test in a subject as soon as they have completed the subject.

5. Boards of Examination would design and implement fair, reliable, and valid testing processes and instruments to assess achievement of the articulated competencies and certify students on the basis of this achievement.
6. Board examinations would be offered at least twice a year to ensure that students have enough time and opportunity to perform well. This process could be made possible through the creation of a comprehensive test item bank. This will enable the move towards a system of on demand examinations in the near future.
7. Vocational Education, Art Education, and Physical Education are an integral part of the curriculum. However, in this case, much of the assessment will have to be demonstration-based and not written-exam based. It is recommended that 75% of weightage in overall certification be given to such demonstration-based assessment, and only 25% to written examination.
8. Science and other subjects also need to have demonstration-based assessment, e.g., conducting experiments. This would have 20-25% weightage in the overall certification of the subject.
9. Selection of test developers, reviewers, translators, and evaluators for Board Examinations would be based on a rigorous process. Boards of Examination would ensure that all test developers, reviewers, and evaluators go through formal University-certified courses on test development. In addition, there would be ongoing capacity building of test developers, evaluators, and reviewers.
10. Test development processes for written examinations would be streamlined following the steps stated below:
    - An assessment framework would be developed to ensure a well-articulated basis for deciding what to test. This framework would detail out the Competencies, Learning Outcomes, and content domains to be assessed.
    - A blueprint based on the assessment framework with all relevant information would be developed. The information in the blueprint includes Competencies, Learning Outcomes, and content domains to be tested, format of test items (e.g., MCQs, short written answers, others), length of the test, and marking schemes.
    - Test items and scoring guides would be developed. Test item formats are of two kinds - Selected Response questions (e.g., MCQs, True/False); and Constructed Response questions where the student must develop the correct response. Some important quality parameters to be kept in mind while designing test items such as language clarity, factual accuracy, quality of distractors, and choice of stimulus materials (e.g., graphics, illustrations, maps).

- Once test items are developed, rigorous review procedures would be followed. Boards of examination should ensure periodic, rigorous reviews of the quality of test instruments designed.

5.6.5 Evolving State Credit Framework for School Education

The state will develop a credit framework to be followed by all schools at the secondary education stage with a view to:

- Removing the distinction between arts, science, social sciences and commerce, etc. giving students credits for every academic/ skill/ experience
- Promoting stronger collaboration between institutes
- Making credit mechanisms simpler and uniform.
- Increasing focus on innovation.
- Complementing the demographic dividend and transforming India into the Skill Capital of the World.
- Allowing students to attain NSQF-approved foundational skills developed by industry and be more employable.
- Allowing integration of quick educational upgradation/up-skilling.

5.6.6 Assessing Values and Dispositions in Board Examinations

Values and dispositions must be assessed through Board examinations. Two possible methods for the purpose are given below in options 1 and 2. Boards of examination would devise their own methods based on these principles.

Option 1: Give students questions based on the subject being assessed that are written in story formats and involve certain conflict in their locality. These conflicts could range from matters of inequality to issues of collaboration to using problem solving abilities. What matters is to allow the student to provide opinion or solution to a problem given in a story. Such situation may help students choose a response that reflects their own thoughts and not that which the student perceives as 'acceptable.' The rubrics for assessing responses to these story questions need to be carefully constructed and applied across student responses.

Option 2: Focus on the assessment of values and dispositions through examinations for Physical Education, Vocational Education and Art Education, all of which have significant practice and demonstration components. All these three subjects have values and dispositions strongly built into their Curricular Goals and Competencies (see Annexure-1). Assessment of achievement of these Competencies also need carefully designed tasks that are coherent, consistent, and meaningful.

Key Takeaways

1. There will be a single body, namely "Board of School Education, Odisha", which would conduct all the Board Examinations (External Examinations).

2. All Teacher Education Institutions should guide their pupil-teachers to adopt the five-step *(Panchapadi)* model in preparing lesson plans with scope for flexibility and innovations.

3. Teachers need to see that children in schools are respected, valued, and actively involved in the learning process.

4. Teachers can foster inclusion by using differentiated instruction, adapting teaching methods to suit varied learning styles and abilities, and ensuring that all children can participate actively. This involves using multiple formats visuals, tactile materials, and audio aids, and encouraging peer support and collaborative learning.

5. Corporal punishment and fear for learning or otherwise, and inequity in the classroom should have zero tolerance.

6. Schools will promote experiential learning pedagogy emphasizing learning by doing, allowing students to engage with content on a deeper level; and use of cross-curricular pedagogy such as arts-integrated and sports-integrated learning, and story-based pedagogy.

7. Assessment in school system need to shift from summative to formative, from content-based to competency-based, and from test of memorization to tests of higher-order skills.

8. The progress card needs to be a holistic and multidimensional report reflecting the progress as well as the uniqueness of each learner in the cognitive, affective, and psychomotor domains. All the three approaches to assessments: *assessment of learning, for learning, and as learning,* need to be used in school education.

9. SCERT, Odisha will prepare Holistic Progress Card (HPC) to provide a 360-degree, multidimensional report of progress, to reflect in detail the progress as well as the uniqueness of each learner in the cognitive, affective, socio-emotional, and psychomotor domains.

10. The onus of learning and assessment should lie on different stakeholders, e.g., parents, children, teachers and principal.

11. Board examinations will be conducted for Grades 10 and 12. But, all students will take school examinations in Grades 3, 5, and 8, which would preferably be school-based;

12. Board examinations should be offered at least twice a year to ensure that students have enough time and opportunity to perform well.

Chapter 6

School Culture and Processes

Education is a creation and creator of culture. School, being a sub-system of society, must preserve, promote and transmit society's culture to its young generations. Hence, the culture of a society must be reflected in school's diverse practices and processes. A fundamental element of school culture is to sensitize all stakeholders in the school system to the notions and approaches of inclusion and equity through different activities, including teaching-learning of curricular subjects. In this chapter, a set of activities, aligned with the state's culture, have been proposed for schools to adopt.

The culture of the school greatly influences students' learning experiences. It helps them stay motivated, engaged, and interested in their studies, making the learning process more effective. By encouraging curiosity and excitement, it fosters a positive attitude toward gaining knowledge. Additionally, it shapes students' values and behaviours, which are essential for their overall growth and character development. School culture should be an essential part of the curriculum, shaping the values and attitudes. It must create an engaging and dynamic learning environment for students. Additionally, factors like teacher motivation and community involvement play a crucial role in student learning. Schools should fully use their culture to create meaningful learning experiences, making the most of spaces and opportunities beyond just classroom teaching. School culture should reflect its rich heritage, diversity, and inclusivity. It must promote respect, equity, and sustainability while integrating local art, folk traditions, and tribal languages. Engaging the community through artisans and storytellers can enrich learning. Disaster preparedness and environmental awareness should also be emphasized. By aligning education with Odisha's cultural and social fabric, schools can foster unity, pride, and holistic development.

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 its most vulnerable citizens. [NEP 2020, para 6.19, p. 28]

6.1 Understanding School Culture

School culture consists of two key aspects. The first includes the values, norms, and beliefs that define it, while the second refers to how these are reflected in behaviours, relationships, and practices. Although both are interconnected, students learn mainly through their experiences, which should be structured to help them achieve curricular goals. The key elements of school's cultural experience are as follows:

Relationships: This refers to how everyone in the school – teachers, students, and parents – interact and work together, e.g., teachers listen to students, care about their well-being, collaborate with colleagues, and involve parents in learning.

Symbols: This is about what schools show and celebrate, e.g., posters, pictures, and writings on the walls share the school's values. Praising students in assemblies also shows what the school finds important.

Arrangements and Practices: These refer to the ways in which the school organizes spaces and activities to reflect its culture, e.g., seating arrangements, grouping students in sports or tasks.

In Odisha, schools can use symbols to represent their values while honouring the state's diverse cultural and linguistic heritage. Instead of fixed quotes, schools can introduce a 'Thought of the Day' board featuring proverbs in Odia and tribal languages to encourage inclusivity. Walls can be decorated with traditional art forms like *Pattachitra,* Saura paintings, or murals depicting Odissi dance and tribal traditions to showcase the region's rich artistic legacy. Schools can highlight leaders like Utkalmani Gopabandhu Das, Utkal-Gourav Madhusudan Das, Buxi Jagabanhu, and tribal freedom fighters like Laxman Nayak alongside national figures, ensuring diverse representations. Display boards can feature students' work on Odisha's natural beauty, historical sites, and local crafts, making learning more relevant. Classrooms, halls, and student groups can be named after Odia rivers, festivals, or cultural figures to celebrate regional identity. Assemblies can include folk tales, traditional songs, and cultural performances from various communities, including tribal groups, to promote unity and pride in local traditions. School uniforms should be practical for Odisha's climate and be designed to be inclusive and affordable for all students. Schools should also ensure equality in seating and facilities, avoiding signs of hierarchy to create a welcoming and student-friendly atmosphere that upholds the values of inclusivity, diversity, and respect for all cultures.

6.2 School Culture and Its Impact on Learning

School culture supports student learning in two ways: (i) Developing an Enabling Learning Environment, and (ii) Development of Values and Dispositions

6.2.1 Developing an Enabling Learning Environment

A supportive and inclusive school culture is the foundation for learning and growth. Respect,

safety, and strong relationships between students and teachers make learning and teamwork easier. A positive environment, along with responsibility and effort, helps to achieve educational goals. The key characteristics of an enabling environment and their corresponding elements can be seen from the following table.

Table 7a

Characteristics of an Enabling Environment	Constituent Elements of School Culture (Key Examples)
Inclusive	• All students actively participate in classroom and school activities. • No discrimination based on gender, caste, religion, or other factors. • Content, pedagogy, and assessments are designed for inclusivity.
Violence-free	• Teachers and senior students carry out their tasks responsibly. • Clear expectations are set on behaviour and work. • Persistence to complete one's work is encouraged. • Individuals are encouraged to admit their faults and to acknowledge and express gratitude for the help received from others.
Caring	• Teachers try to know the interest areas of students, and the challenges they are facing. • Teachers and students celebrate achievements made by students. • School is concerned about the student's family.
Responsibility	• Teachers and students are punctual and follow schedules. • Tasks are attended to meticulously. • Students take part in assemblies, *Bal Sabha*, and assigned tasks. • Students engage in decision-making process.
Encouraging Good Habits of Learning	• Teachers and senior students can be observed for being punctual, following the school timetable, and attending to their tasks. • Students share responsibilities in the school assembly, *Bal Sabha*, various student committees, and assignments given by teachers.

6.2.2. Development of Values and Dispositions

Building values and attitudes needs a thoughtful and focused effort, similar to teaching subjects. It should be approached seriously and comprehensively. School principals and teachers often follow the existing school culture and their own beliefs. Principals mainly handle administrative tasks, while teachers focus on completing the syllabus, giving attention to value education. NEP 2020 outlines key values that schools should promote. While each value is important, similar ones can be grouped together. The table below highlights these value clusters and the school culture elements that support their growth.

Table 7b

Values and Dispositions	Constituent Elements of School Culture
Empathy, **Respect,** **Sensitivity,** ***Ahimsa,*** **Respect for Elders,** **Courtesy,** **Forgiveness,** **Compassion**	• The practice of calm, respectful dialogue when one breaks rules. • No corporal punishment, bullying, threatening, and abuse. • Mistakes are seen as a natural part of the learning process. • Refraining from carrying grudges and all individuals are encouraged to practice forgiveness. • Encouragement and support are available for all. • Respect is expressed towards elderly members of the immediate community, larger society, and nation.
Responsibility, ***Swachchta,*** **Respect for the Environment,** **Patience,** **Respect for Public Property,** **Sustainability**	• Individuals follow school rules and regulations. • Sharing of responsibilities in school assembly, *Bal Sabha*. • Students and teachers participate in community service. • Students participate in decision-making processes. • Individuals practice sustainable use of resources. • Students practice proper upkeep of one's belongings, classroom, and school property.
Honesty, **Integrity,** ***Satya***	• Individuals practise being truthful. • Demonstrating the right action even through difficulties and challenges. • Individuals are encouraged to admit to their faults and mistakes.
Fraternity, **Patriotism,** **Tolerance,** **Peace Rootedness, and Pride in India**	• Students receive exposure to various forms of diversity and richness of traditions and cultural practices of our country, • All subjects talk about the Indian contribution to the world. • Celebration of national festivals. • Students learn about the Indian freedom struggle.
Justice, **Equity and Fairness,** **Diversity,** **Pluralism,** **Gender Equality,** **Liberty,** **Respect for All**	• The school discourages all discriminatory practices. • The school ensures equal opportunities for all students • Respect is given for varied opinions, interest areas, and talents in the school community. • There is care for students' health, feelings, and interest areas. • The school provides accessible physical infrastructure and assistive devices, ensuring the participation of all students.
Seva, ***Nishkam Karma,*** **Sacrifice,** **Helpfulness**	• Individuals help those in need within the school and outside. • Periodic community service opportunities are available to students. • There is a focus on performing one's duties and tasks rather than on personal gains and other benefits. • Active appreciation for relinquishing one's desires and comforts for the sake of the greater good.

Values and Dispositions	Constituent Elements of School Culture
	• Focus on teamwork and the growth of all individuals.
Rational Thought and Scientific Temper	• The school encourages questions and inquiry-driven exploration. • Seeking evidence that supports facts is deemed important. • There is an active discouragement of rumours and misbeliefs. • Analysing information from different viewpoints is encouraged. • Exploration of new methods to solve various problems.
Creative Imagination	• Encouragement for creative tasks among students and teachers in different subjects. • Available physical space and other resources are used. • Students are involved in the creation and use of TLMs. • Students are involved in enhancing the aesthetics of the school environment.
Hard Work and Commitment	• Consistency and regular practice of all learning tasks. • Individuals take their learning seriously. • Students work towards goals set by the teachers. • Literature, storytelling, and in-person sharing by people on hard work and commitment.
Courage and Resilience	• Individuals explore multiple strategies in solving problems. • Efforts are made to resolve conflicts peacefully. • Open sharing of vulnerabilities, fears, and other emotions and help.

6.3 Key School Practices

Schools need proper processes and arrangements to function well. For example, the practices like Mid-Day Meal (MDM) in public schools require planning for food supply, cooking, serving, quality checks, and waste management. These practices reflect the school's values of care, nutrition, and community participation. A deeper discussion on important school processes such as classroom activities, assemblies, meals, sports, and community involvement, is presented below.

Classroom Practices: Different classroom practices, such as seating arrangements, availability and accessibility of TLMs, giving ownership and responsibility to students in the learning process, cleanliness, classroom routines, directly and indirectly, promote different values.

School Assembly: School assemblies can be a great learning opportunity if planned well. With teacher guidance, students can take turns in leading assemblies. These can showcase India's language diversity through speeches, songs, and skits in various languages. The assembly setup should be well-planned, including its duration, seating, anchoring, schedule, and use of music or sound systems. Students shouldn't have to stand the whole time, and sitting in strict class-wise rows may not be necessary.

Mealtime: Food quality, seating, and hygiene during mealtimes are important. Students should eat together, and schools must ensure nutritious meals. Teachers can check food quality, help serve, and eat with students to guide them. Everyone should share hygiene responsibilities like washing plates and keeping utensils clean.

Distribution of work: Students and teachers take part in various school tasks like organizing meals, cleaning, and preparing for the day. These duties should be assigned thoughtfully, without reinforcing stereotypes. Fair task distribution helps develop teamwork, discipline, responsibility, and respect for all types of work.

Sports Activities: Sports are important for students' physical and mental well-being. Some students may shine more in sports than in academics and can assist teachers in coaching others, building confidence and teamwork. All students, regardless of gender or ability, should be encouraged to participate, with modified games for inclusivity.

Engaging with Parents, Family, and the Community: A school's culture is reflected in how it interacts with parents, families, and visitors. Schools should ensure that all parents feel welcomed and are clearly informed about their visiting times. Parents can also contribute by sharing their experiences with students. Regular home visits by teachers help build strong parent-teacher relationships.

In schools of Odisha, classroom practices should reflect Odisha's multilingual heritage to support tribal students. Assemblies can include folk performances, recitations of Odia literature, and discussions on local heroes. Mealtimes should follow the spirit of Jagannath culture, ensuring that all students eat together, with teachers monitoring nutrition and hygiene. Work distribution must be fair, avoiding stereotypes and encouraging teamwork, with students and teachers collectively managing tasks like cleaning and meal service. Sports activities should include traditional games like *Kabaddi* and *Kho-Kho*, ensuring equal opportunities for all genders and abilities. Schools should also engage weavers, farmers, and artisans in student learning, linking education to Odisha's heritage. Regular visits by teachers to remote

A Case of Exemplary Positive School Environment

(Evidence from Saraswati Sishu Mandir, Thuamula, Kalahandi district)

The residential Saraswati Sishu Mandir, Thuamula, Kalahandi district, established in the year 1994, caters to the education of children belonging to different Scheduled Tribe communities. The school stands as an example of cultural enlightenment and inclusivity. The school day starts with a morning assembly at 5 a.m. which includes prayer offered to the Almighty, chanting a *Shloka* from the Bhagabat Geeta, followed by yoga and physical exercises, fostering students' holistic development and ensuring physical, mental and spiritual well-being. Emphasizing on national integration and cultural diversity, the school actively celebrates national and international days along with the local festivals.

The school, in addition to curricular programs, operates as a community development center wherein the local community organizes different festivals, participates in different activities organized by the school and supports the school's agricultural initiatives. Students engage themselves in numerous school, district and state-level activities, showcasing their varied skills and talents. The school possesses a strong and empowered alumni network of over 1000 former students, who contribute towards the growth and development of the school in multiple ways. The school has a cowshed and a large kitchen garden for imparting vocational education among students. The school has also an eco-club that promotes environmental awareness through plantation activities in and around the school premises. Equipped with modern amenities such as digital classrooms, science labs, library and a computer lab, the school provides enhanced technological facilities to its students. Each day ends with an evening prayer and *Shanti Mantra* reinforcing discipline and gratitude among students.

villages and participation in local festivals like *Raja Parba* and *Nuakhai* strengthen parent-school relationships, making learning more relevant to students' lives.

6.4 School Processes

Every school follows structured processes to ensure smooth daily operations and progress toward curricular goals. These processes cover everything from maintaining cleanliness to enhancing teaching and learning quality. Clear processes help define tasks, guide decision-making, and ensure a positive approach to work and problem-solving. School processes also play a key role in reflecting and strengthening the values and beliefs that shape the school's culture. These processes can broadly be grouped into three categories, viz., *Curricular Processes* that directly influence learning, e.g., scheduling, assemblies, library usage, student groups, school events, incorporation of technology in education; *Curriculum-associated Processes* that indirectly impact learning, e.g., processes that include teacher professional development (TPD), parent and community involvement, the Mid-day Meal program, and other similar activities; and *Organisational Processes* that ensure the smooth functioning of learning and support activities, e.g., school development plan, annual calendar, resource management, data handling, conflict resolution, discipline, and safety measures.

School Assembly

School Assembly will be held at the start of the day for minimum of 20 minutes duration. There should be a calm, quiet, peaceful and spiritual atmosphere. Students will sit on the floor with mat in a calm and straight position. They will be entrusted with the responsibility of managing the assembly under the guidance of teachers on rotation basis.

Suggestive Activities

i. OMKAR 3 Times
ii. Shlokas from *Bhagabat Geeta*
iii. Prayer to the Almighty (*Aahe Dayamaya/ Karuna Sagar or any simple prayer*)
iv. Patriotic song (Simple song like *Aie desha Aei mati*)
v. Moral story
vi. Shanti Mantra (*Sarbe Bhabantu Sukhino*).

6.4.1 Curricular Processes

These processes directly impact learning. Schools focus on using time and resources effectively by allocating time for subjects and creating learning spaces beyond classrooms, like assemblies and libraries. This section explores how to maximize daily schedules and spaces for learning.

School Timetable: A timetable organizes daily school activities and should be designed thoughtfully to balance subject learning with group activities. A well-planned timetable ensures adequate time for each subject while allowing space for various activities, whether weekly, fortnightly, or monthly, without disrupting the overall structure. Frequent timetable changes can disrupt the school's rhythm. It should be carefully planned for each stage, considering curricular needs. The timetable can also accommodate admissions, exams, and festivals as needed.

School Assembly: Assemblies bring the school community together, fostering a sense of belonging and collective learning beyond academic subjects. They should be engaging and thoughtfully designed, offering all students opportunities to participate in different ways. Instead of becoming routine or mechanical, assemblies should encourage creativity, self-

expression, and confidence-building. Schools should create a supportive atmosphere where students feel comfortable sharing their thoughts and talents without pressure or fear of judgment. By varying the format and content, assemblies can become meaningful experiences that inspire learning, collaboration, and personal growth.

In the Foundational Stage, assemblies can mostly take place in classrooms, with a weekly gathering of multiple grades in larger groups. From the Preparatory Stage onwards, students can take part in multi-grade and whole-school assemblies.

Assemblies, usually held at the start of the day, can be single or multiple smaller gatherings depending on the school's size. A minimum of 20 minutes allows meaningful engagement. Activities may include singing, meditation, storytelling, skits, student-reported news, book or movie reviews, artwork displays, puppetry, and important announcements. Singing and group activities like dance promote cohesion, while theme-based assemblies encourage creative expression. All activities should actively engage students and encourage participation. Schools in Odisha will have flexible schedules for extreme weather, including early morning classes in summer. Time should be allocated for Odia folk music, tribal art, and storytelling to preserve cultural heritage. Assemblies should incorporate Odia and tribal languages, feature folk performances and historical storytelling such as *Pala* and *Daskathia*, and invite local artisans. Theme-based assemblies should focus on disaster preparedness and sustainability like sustainable farming, and biodiversity conservation (Chilika Lake, Similipal forests), to make learning more locally relevant.

Library: Libraries expand learning beyond textbooks, offering self-driven and guided knowledge. A well-stocked school library and classroom reading corners are essential. Library can be a dedicated space or a classroom corner, but it must have a wide range of accessible books. It should include diverse genres, books on stories from different communities, bilingual books, books in Odia and other Indian languages, braille books, and assistive devices for students with disabilities, should also be available. Libraries should offer regional, bilingual, and tribal literature, along with digital resources like DIKSHA and e-Vidyalaya. Schools should organize book fairs, storytelling sessions, and author visits to encourage reading.

Student Committees and Forums: Schools will form student groups like *Bal Sabha* and *Bal Panchayat* to involve students in activities and build responsibility. Some student committees will handle school tasks like cleanliness, Mid-day Meals, and events, while others engage with the community. Groups like Health, Sports, Eco, Music, and Heritage clubs will work under a teacher's guidance.

Events and Celebrations: School celebrations will be enjoyable and meaningful, connecting with learning through a well-planned calendar. Besides annual day and national festivals, schools will celebrate student achievements, welcomes, farewells, alumni success, and community contributions. Monthly activities like cooking, playing, or community work can bring students together. Bigger events, like annual day and sports day, require detailed planning as they involve the larger community. Schools should celebrate *Utkal Divas, Raja Parba,* and *Nuakhai* while promoting folk art competitions. Students should lead event planning with a focus on eco-friendly practices and community participation through *Mo School Abhiyan.*

These initiatives will create an inclusive and culturally enriched learning environment in the schools of Odisha.

6.4.2 Curriculum-Associated Processes

Effective teaching and learning require teachers to reflect and improve together. Involving parents for support and ensuring students' good health also play a key role in enhancing learning.

Teacher Collaboration and Professional Development: Teaching is a collective responsibility, not just an individual task tied to textbooks. Subject-based groups at the school or cluster level will provide a platform for sharing ideas, feedback, and resources. Teachers' skills and teamwork are key to student learning. Teachers from different subjects can collaborate on integrated plans, while monthly forums can address common concerns like adolescent issues. Strong teacher collaboration is essential for a dynamic school environment and effective processes. Experienced teachers can be trained as mentors to guide new teachers.

Engaging with Parents, Families and Communities: Schools should develop meaningful connections with parents and the community to enhance student learning and contribute to the community's well-being. This can be done by actively engaging them in school activities and encouraging their participation in various school initiatives. When parents visit for admissions, they should be introduced to the school's vision, teaching methods, and expectations. Parents should receive regular updates on their child's progress. On Parent Teacher Meeting (PTM) days, schools can organize interactive activities for parents, fostering a sense of community. Teachers should visit students' homes whenever possible to understand their family environment and socio-cultural background.

Mealtime, Health, and Hygiene: NEP 2020 highlights the importance of nutrition in learning, especially in the early years. Many students suffer from malnutrition, which affects their participation in school, and for some, the Mid-day Meal is their only proper meal of the day. Ensuring nutritious, hygienic, and good-quality meals can significantly support their health and learning. When food is prepared in school, it allows for better monitoring of quality and variety. Schools should regularly organize medical camps with support from the government health department.

Incorporating Local Elements: Schools in Odisha should incorporate local elements such as biodiversity, Jagannath culture, and tribal heritage into education. Senior teachers should mentor new ones, and induction programs should cover Odisha's educational needs, including multilingual learning for tribal students. Schools should actively engage parents through Mo School Abhiyan, introducing them to the school's approach during admissions with a focus on Odia and tribal education. PTMs should highlight student progress and include cultural activities. Parents should participate in 'bagless days,' heritage walks, and storytelling sessions featuring Odisha's folklore. Teachers should visit homes, especially in tribal areas, to understand students' backgrounds. Schools should involve communities in local fairs, health camps, and disaster awareness programs. Mid-day Meals should include local, nutritious foods like ragi and millets, and hygiene awareness should be taught through assemblies and class activities. Regular health checkups should monitor anaemia, vision issues, and overall well-

being. Rural and tribal schools should provide hygiene essentials and maintain cleanliness in residential schools and kitchens.

6.4.3 Organizational Processes

Schools need well-organized efforts to ensure smooth curriculum implementation and related activities. This involves planning, resource management, and addressing key concerns like student safety, conflict resolution, and discipline.

School Development Plan: A key organizational process is creating a school development plan that outlines yearly priorities and guides decision-making to address challenges and achieve goals [NEP 2020, 7.9]. It helps set long-term goals while also enabling short-term progress based on the school's current status. Effective school planning involves setting clear goals within a defined timeframe, following prescribed formats, and engaging the community, SMC, senior students, and local contributors for support and ideas. A strong school development plan should outline clear academic and administrative goals, specifying responsibilities, implementation methods, and resource management. It should include a detailed curricular plan for the year, broken into monthly and quarterly targets. Effective planning requires reviewing the previous year's progress and current challenges at both subject and student levels. Collaboration among teachers is essential for strategic and detailed planning.

Time and Resource Allocation: An essential aspect of planning is optimizing the use of available time and resources while also finding ways to acquire any additional resources needed. Schools should plan their academic year in advance with an annual calendar that includes key events like session dates, admissions, exams, national celebrations, school functions, sports day, field trips, PTMs, holidays, alumni meetings, and summer camps. This calendar should be created collaboratively with teachers and parents and shared with students and all stakeholders. Schools have both fixed and consumable resources that require proper planning at the start of the year. This includes determining what is needed, how to mobilize them, and assigning responsibility. Shared resources like computers and printers in the staff room should have clear usage policies.

Data Management and Reporting: Schools must establish efficient systems for recording, storing, and utilizing data, as accurate information is essential for planning, progress review, and reporting. Maintaining well-organized data ensures better decision-making. The most crucial data pertains to student learning, which should be tracked both qualitatively and quantitatively. Monitoring improvements in reading, writing, and attendance helps teachers assess their teaching effectiveness. Regular analysis of this data by School Principals and Teachers enables timely interventions to support student learning.

Ensuring Student Safety: Schools must prioritize the safety and well-being of all students, protecting them from physical harm, discrimination, harassment, and abuse. Such experiences can have lasting effects if not addressed promptly. Ensuring a secure environment requires integrating safety measures into daily school practices. Responsibility for maintaining a safe campus is shared by the entire school community. Schools must prioritize road safety by collaborating with local authorities. Regular inspections of buildings, furniture, and equipment, including playground and lab materials, should be conducted to eliminate hazards. Dangerous

items like chemicals and sharp tools must be securely stored and used only under adult supervision, with clear instructions provided to students. First-aid kits should be readily available for immediate use. Schools must protect students from any form of violence, abuse, or corporal punishment.

Emotional Safety: Schools must create a safe and inclusive environment where all children are treated equally. Teachers and staff should be trained to recognize the impact of verbal and physical abuse on students. Understanding students' home environments helps identify any signs of distress or discrimination. Encouraging open conversations fosters trust, allowing students to express their concerns and anxieties. Schools should actively promote values such as kindness, empathy, and non-violence. Teachers should use encouraging language and reinforce positive behaviour to nurture a supportive school culture.

Intellectual Safety: For meaningful learning, students must feel safe to take risks and explore new ideas. Mistakes should be seen as a natural and essential part of the learning process. They should be encouraged to express their thoughts freely without fear of ridicule or punishment. Classrooms should foster an inclusive environment, where all students feel confident to participate, knowing their contributions are valued, even if incorrect. Student participation reveals diverse perspectives and learning styles. Assigning tasks only to selected students can make others feel incapable, hindering their growth. Therefore, responsibilities should be rotated among all students, to build confidence.

Prevention of Bullying: Bullying involves repeated, intentional harm directed at an individual or group, causing distress and insecurity. It can take various forms, including verbal insults, mocking someone's background or appearance, aggressive shouting, pranks, and online harassment. Such behaviour fosters fear and inequality, affecting students' well-being. Schools must promote a culture of kindness and inclusion to ensure a safe and supportive environment for all. Schools must address bullying immediately with a zero-tolerance approach. Teachers and staff should stay vigilant, while students should be encouraged to report incidents.

Preventing Sexual Harassment or Sexual Abuse: Schools must strictly follow the laws under POSH (Prevention of Sexual Harassment) and POCSO (Protection of Children from Sexual Offenses) to ensure a safe environment for students and staff. All adults in the school must act responsibly, uphold ethical behaviour, and protect others from any form of misconduct. Any violation must be met with zero tolerance.

Cyber Safety: Students should be educated on cyber safety, responsible technology use, and the impact of screens and gadgets. Internet access must always be supervised by teachers to ensure appropriate usage and protect students from cyber risks like impersonation, inappropriate content, cyberbullying, and stalking.

Table 7c

General Safety Measures
a. Parents' contact details should be regularly updated and kept easily accessible, including emergency numbers for all students and staff.

b. Medical conditions, necessary medications, and preventive care should be documented at admission or hiring, updated frequently, and shared with relevant personnel.

c. Any temporary emotional distress or trauma a student is experiencing should be shared only with trusted teachers or individuals who can provide support.

d. Contact numbers for nearby hospitals, doctors, ambulances, fire stations, and police stations should be prominently displayed for easy access.

e. Private transportation used by students must undergo routine safety checks. Vehicles should be in good condition, and drivers must have valid licenses and pass background screenings.

f. Digital devices should be equipped with child-safety features that are regularly updated to ensure students' online protection.

Resolving Differences, Conflicts and Disciplinary Issues: Students and parents should receive written guidelines on expected behaviour at the time of admission. School rules can be included in student diaries and displayed in classrooms, staff rooms, and notice boards for easy reference. Regular discussions during assemblies or class sessions can help students understand the purpose behind these rules. Instances of misbehaviour should be addressed respectfully, with the expectation that students will correct themselves. Older students can encourage their peers to follow the rules. For repeated rule violations, actions like temporary removal from activities, isolation, warnings, parental consultation, or fines may be necessary. Expulsion from school should only be taken when all other measures have failed.

Ensuring smooth curriculum implementation in schools requires a strategic, student-centric approach that aligns with the state's commitment to holistic education. A well-structured School Development Plan (SDP) sets clear academic and administrative goals, ensuring effective planning, resource optimization, and personalized learning through digital tools. Given Odisha's diverse socio-cultural landscape and geographical challenges, schools must prioritize critical thinking, problem-solving, collaboration, and ethical decision-making through innovative teaching, structured mentoring, and counselling. Ensuring student safety, well-being, and emotional resilience is crucial, with a strong focus on discipline, peer mentoring, and structured behavioural frameworks to foster responsible and adaptable individuals. As per the recommendation of NEP 2020, there is an urgent need of creating an inclusive, future-ready learning ecosystem that strengthens foundational skills, nurtures cultural identity and social responsibility, and equips students with 21st-century competencies.

Key Takeaways

1. School culture consists of two key aspects: a) the values, norms, and beliefs that define it, and b) how these are reflected in behaviours, relationships, and practices. Schools should recognize the state's rich cultural and linguistic diversity and integrate them into curriculum to make education more inclusive and relevant to the students.

2. Involving local tribal, coastal, rural, urban communities, socially disadvantaged groups (SEDGs) and *Divyangas* in school activities helps ground learning in real-life experiences and strengthens student engagement across diverse regions of Odisha.

3. Schools should visually reflect Odisha's rich traditions through symbols like *Pattachitra*, *Saura* paintings, murals of *Odissi* dance, and representations of tribal customs, fostering a strong connection to regional identity. Introducing a 'Thought of the Day' in Odia and tribal languages encourages linguistic diversity and helps students from different backgrounds feel represented and valued.

4. Displaying images and stories of Odisha's leaders like Utkalmani Gopabandhu Das, Buxi Jagabandhu, Laxman Nayak, and others alongside national figures promotes pride in local history and ensures diverse representation.

5. From naming classrooms after Odia rivers and festivals to ensuring equality in seating, uniforms and shared mealtimes, schools should create welcoming and respectful environments for all communities.

6. Include folk performances, Odia literature recitations, and stories of local heroes in morning school assemblies to connect students with their cultural roots and instil pride for Odisha's heritage. Schools should also include traditional local games like *Kabaddi* and *Kho-Kho,* ensuring participation of students across gender and categories.

7. Schools should involve local weavers, farmers, and artisans in teaching-learning process; and participate in festivals like *Raja Parba* and *Nuakhai* to build strong parent-school-community relationships and to make education locally relevant.

8. Schools should incorporate Odia folk music, tribal art, storytelling traditions like *Pala* and *Daskathia*, and celebrate regional festivals (e.g., *Utkal Divas*, *Raja Parba*, *Nuakhai*) to preserve and promote Odisha's rich cultural heritage.

9. Flexible scheduling during extreme weather, and theme-based assemblies (e.g., conservation of bio diversity like *Chilika Lake*, *Similipal tiger reserve*) make education more meaningful for students.

10. Libraries should provide access to regional, bilingual, and tribal literature, along with digital platforms like DIKSHA and e-Vidyalaya. Activities like book fairs and storytelling sessions should be organized to foster reading habits.

11. Platforms like *Bal Sabha*, Eco Clubs, and Heritage Clubs should empower students, while disaster management committees must equip them with life skills like first aid and emergency response.

12. Through *Mo School Abhiyan*, schools should involve parents in admissions and cultural activities, while teachers conduct home visits to understand student contexts better.

13. Mid-day meals should include local nutritious foods like ragi and millets, with regular health check-ups and hygiene awareness programs.

14. Each school should prepare School Development Plan (SDP) addressing the state's diverse geographical and socio-cultural needs, and ensuring effective academic planning, resource utilization, and digital integration for personalized learning.

15. Teaching practices must nurture 21st Century skills like critical thinking, creativity, collaboration, problem-solving, and ethical decision-making, adapted to Odisha's local context, through mentoring, innovative pedagogy, and culturally responsive learning experiences.

Chapter 7
Teacher Education

Teachers in India have been recognized as mentors, moral guides, innovators, and agents of social transformation. India's traditional guru-shishya paradigm has held teachers in high esteem since ancient time. The NEP 2020 rightly places teachers at the heart of education reforms to foster a more equitable, creative, and value-driven learning ecosystem. This chapter emphasizes that teachers must themselves be learners, continuously trained and empowered to promote competency-based learning, equipping them to nurture students in a dynamic world.

7.1 The Backdrop

Teacher education and teachers' professional development are critical to the provision of formal education. There have been several developments at the national level in the area of pre-service teacher education and continuous professional development programme. National initiatives such as NEP-2020, NCF-FS-2022 and NCF-SE-2023 reaffirm the significance of quality teacher preparation, emphasizing a multidisciplinary approach, values and mentorship. Teachers are expected to align with Indian traditions while being adept in contemporary pedagogy and technology.

The *Samagra Shiksha Framework* (2018) states that for continuous professional development of teachers, the SCERT as the nodal agency for teacher training, would create avenues for professional programmes and prepare professional training modules and manuals in collaboration with the NCERT. It will also encourage the use of technology platforms such as SWAYAM/ DIKSHA for online training of teachers so that standardized/ need-based training programmes can be provided to large number of teachers within a short span of time.

The NISHTHA, in a face-to-face mode, was launched in 2019. The first-level training was provided by the National Resource Group (NRG) to the KRPs and State Resource Persons-Leadership (SRPs-L) identified by the states/UTs. The NRG was constituted and oriented by the NCERT, drawing members from the NCERT, NIEPA and KVS. KRPs and SRPs had provided training directly to teachers at the block level, reducing the cascading effect of training. Currently, NISHTHA online programme is being conducted in three versions: NISHTHA 1.0 for elementary, NISHTHA 2.0 for secondary, and NISHTHA 3.0 for Foundational Literacy and Numeracy as per the NIPUN Bharat.

The "DIET of Excellence" lunched in 2023 by the Ministry of Education, Government of India aims at developing DIETs to become model centres of innovation and educational excellence,

which would empower both students and teachers with tech-enabled infrastructure. The DIETs of Excellence aim for empowering teachers through continuous professional development in the form of specialized training, workshops, and capacity building programmes. The focus is on enhancing their pedagogical skills, subject knowledge, teaching methodologies, and competencies required for school leadership and management, equipping them to deliver high-quality education effectively. The DIETs of Excellence focus on fostering collaboration among educational institutions, government agencies, Civil Society Organisations, community organizations and industry experts. They will create platforms for knowledge sharing, joint initiatives and resource mobilization to enhance the overall quality of education through collective expertise and resources.

7.2 Teacher Education in Odisha

Historically, teacher education in Odisha has been overseen by the Directorate of Teacher Education and State Council of Educational Research and Training (TE & SCERT) and the District Institutes of Education & Training (DIETs) under the Department of School and Mass Education. These institutions played a vital role in shaping both pre-service and in-service teacher training. In June 2021, the Department of Higher Education, Government of Odisha, took over the responsibility of managing secondary teacher education at the college and university levels, including the Institutes of Advanced Studies in Education (IASEs), the Colleges of Teacher Education (CTEs), and the B.Ed. programs. The state offers multiple programs to prepare future teachers, focusing on pedagogy, subject knowledge, and practical teaching experience.

As per the SAMs Portal (2024-25), there are 2750 and 6550 pre-service teachers under the Higher Education Department (Secondary) and under the TE & SCERT (Elementary) respectively. 30 DIETs, 4 BIETs, 31 Government Elementary Teacher Education Institutions (ETEIs), 2 Government Elementary Teacher Education Institutions (SC & ST Development) and 1 Non-Government Aided Secondary Training School managed by the Minority Community of the State are presently engaged in pre-service teacher preparation at the elementary level. Similarly, the state has 16 secondary teacher education institutions under the Higher Education Department. There are a few private special education teacher education institutions running under Rehabilitation Council of India (RCI). Additionally, few multidisciplinary institutions and universities are also running four-year Integrated B.A/B.Sc. B.Ed., two-year B.Ed., two-year M.Ed., and three-year Integrated B.Ed.-M.Ed. programmes. Transformation and opening of the Integrated Teacher Education Programme (ITEP) in multidisciplinary institutions have already been Initiated.

Out of the 30 DIETs in the State, 12 DIETs have now been poised for a transformation in the form of "DIETs as Centres of Excellence" initiatives aligned with NEP-2020. Monthly Cluster-level Meetings (MCMs) are organized on the third Saturday of each month since July 2023. The meetings provide a platform for head teachers and educators to collaborate, share insights, and receive training from the Cluster Resource Centre Coordinators (CRCCs). The sessions focus on various aspects of FLN, including effective teaching strategies, utilization of teaching-learning materials (TLMs), and classroom management techniques. This initiative fosters a collaborative environment, enabling teachers to enhance their instructional practices and

professional development.

The SCERT organizes annual in-service training programs for elementary school teachers. These programs focus on content enrichment in subjects like science, mathematics, languages, and social studies, aiming to improve teaching competencies. The Directorate of Teacher Education (DTE) and SCERT, with support from the UNICEF, has conducted workshops aimed at enhancing facilitation and mentoring skills among teacher educators. These five-day residential programs focus on developing capacities to bring quality in education through effective mentoring. The Cluster Resource Centre Coordinators (CRCCs) play a pivotal role in providing on-site support and mentoring to teachers. They facilitate in implementing educational programs, offer guidance on pedagogical practices, and facilitate professional development at the grassroots level.

Some of the challenges in pre-service teacher education in the state are: (i) Multidisciplinary Government Colleges lack NAAC accreditation, making them not eligible to apply for ITEP (ii) Stand-alone Colleges cannot apply for ITEP due to their limited scope, and (iii) Faculty shortage and non-compliance with NCTE norms may lead to derecognition of the existing institutions.

7.3 Pre-Service Teacher Education

There is a need for high-quality, flexible, culture-responsive, and context-responsive teacher education system, promoting excellence in teacher preparation and addressing the diverse needs of school education and teacher education in the state. For this, pre-service teacher education programme must prepare teachers with a sound knowledge base and a strong professional identity. This will be best done through an interdisciplinary curriculum and a graded exposure to practicum over a period of time. The four-year ITEP will provide sufficient opportunities for student teachers to observe and experience school and classroom practices. To ensure that teachers are available for the restructured school stages as soon as possible, the first step must be to estimate teacher demand and supply. This must be undertaken by the School and Mass Education Department on priority, building on existing studies related to the demand and supply of teachers for specific stages of school education. This will help ensure that the right number and type of universities offer the four-year Integrated Teacher Education Programme (ITEP) with specializations in subjects for different stages of education: Foundational, Preparatory, Middle, and Secondary. It must also ensure adequate practice opportunities for student teachers in all kinds of school environments.

The 4-year Integrated Teacher Education Program is designed to blend both Social Sciences and Physical Science subjects, incorporating theoretical and practical components, and offer a unique approach to teacher education. All the multidisciplinary institutions and universities should adopt such a structure to prepare future teachers enriched with subject-specific content and skilled critical thinking, cultural awareness, and practical teaching skills, positioning them to foster a more integrative and value-based learning environment for students. Stand-alone Teacher Education Institutes (TEIs) will be restructured to multidisciplinary institutes to start ITEP. These institutions will also include a 2-year B.Ed. program for those who have already received a Bachelor's degree in a specialized subject. A 1-year B.Ed. may also be offered for candidates who have received a 4-year undergraduate degree in a specialized subject or a post-

graduate degree in a specialty and wish to become a subject teacher in that specialty. Scholarships for meritorious students will be established for the purpose of attracting outstanding candidates to the 4-year, 2-year, and 1-year B.Ed. programmes.

All the TEIs must adhere to the National Council for Teacher Education (NCTE) standards, ensuring high structural and process quality. This focus will support the development of teachers with specialized subject knowledge and pedagogical expertise, to ensure quality education in schools. Since the programme focuses on Multidisciplinary Education, there must be adequate Classrooms, Laboratories, a Library with reading room, and a playground. In the present situation, in Odisha, almost all the MDIs running teacher education programmes are having scarcity of both physical and human resources. Necessary steps will be taken to provide adequate and accommodative physical resources, classrooms, laboratories and library and adequate teacher educators. Resources of the existing MDIs may also be shared with teacher education programme. Ph.D. programs should be reoriented and strengthened to emphasize research in pedagogy, strengthening teaching and learning practices.

The existing curriculum of teacher education is to be revisited and revised to promote multilingualism, holistic development, and inclusiveness as per the recommendation of the NCFTE. The curriculum is to be contextualized with reference to the indigenous culture of India, especially Odisha. It must be stage-specific, addressing all levels/stages of school education such as Foundational, Preparatory, Middle, and Secondary Stages to equip teachers with skills relevant to each developmental phase.

Moreover, all the 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. As practiced in the present scenario, the DIETs prepare teachers for the Elementary level. In the revised context, the DIETs may be upgraded structurally and functionally to run ITEP for the Foundation and Preparatory Stages by introducing a stage-specific curriculum. Similarly, CTEs and IASEs will offer ITEP for the Middle stage and Secondary stage through a pre-service teacher education program. Hence, in future, the 4-year integrated B.Ed., offered by such multidisciplinary TEIs will, by 2030, become the minimal degree qualification for school teachers. The DIETs may undertake a two-year B.Ed. programme for the elementary level by introducing adequate infrastructure and faculty.

The TEIs should strengthen partnerships with the SCERT, DIETs, Schools, and communities to provide hands-on training and experiential learning. Enhanced Practical Exposure through linkage and collaborative effort will help future educators gain valuable, real-world teaching experience in diverse school settings, allowing them to apply theoretical knowledge in practical environments. It will also enhance access to a broader range of resources, teaching-learning materials, and expert guidance, enriching the learning experience for teacher trainees. Further, working with communities helps educators understand local needs, values, and cultural contexts, which can be integrated into their teaching to make learning more relevant and meaningful. The TEIs, as higher education institutions, should expand their focus on research in pedagogy, addressing state-specific educational challenges and providing evidence-based solutions to improve school education. The TEIs should incorporate recommendations from the school education system and community needs within their Institutional Development Plans,

fostering social engagement and promoting community-oriented educational practices. Further, the TEIs should also facilitate research work to transform the TEIs into research intensive institutions.

Language diversity should be embraced by establishing multilingual TEIs across the state. The TEIs should create platforms for academic dialogues at the state and national levels to address local challenges, share best practices, and promote the publication of educational resources in regional languages.

7.4 Recruitment and Career Progression of Teachers

In Odisha, the Secondary Stage 2 (grades 11-12), functions in Higher Education Institutions baring in a few places. The teachers at this stage mostly do not possess any teacher education qualification (B. Ed., B. Sc. B. Ed., BA B. Ed., or, B. P. Ed., etc.) as a result of which they do not qualify to teach at the Senior/Higher Secondary Stage 2 (grades 11-12) as recommended under NEP, 2020. Keeping in view the service security of large number of such teachers the following measures may be considered.

i. The existing teachers of the state with CT/D. El. Ed. qualification may continue to work at the Foundational Stage. All teachers will have the opportunity to progress in their career (in terms of salary and promotions) while continuing to serve as teachers in the same stage of education.

ii. The existing teachers with B. Ed., B. Sc. B. Ed., BA B. Ed., or, B. P. Ed. may continue to work at Secondary Stage 1 (grades 9-10).

iii. The existing teachers with Post Graduate qualifications in relevant subjects, but without any teacher education qualification (B. Ed., B. Sc. B. Ed., BA B. Ed., or, B. P. Ed., etc.) may continue to teach at Senior/Higher Secondary Stage 2 (grades 11-12). These teachers will be given opportunity to obtain B. Ed. degree B. Ed., B. Sc. B. Ed., BA B. Ed., or, B. P. Ed., etc. as in-service teachers from recognized Teacher Education Institutes within a stipulated time period.

All categories of teachers stated above need to have the opportunity to progress in their career, in terms of salary and promotions, while continuing to serve as teachers in the same stage of education.

7.5 Continuous Professional Development of Teachers

Continuous Professional Development training and activities for stage-specific teachers will be designed and implemented by the DIETs, CTEs, and IASEs for respective stages of school education. The TEIs will organize professional development activities through blended learning platforms such as SWAYAM and DIKSHA, and encourage faculty to create and share high-quality e-resources, expanding the digital repository for the state and enhancing access to diverse teaching learning materials. It must be supplemented with relevant handbooks, and other training materials collaboratively developed by relevant stakeholders brought together by the SCERT.

The modules for capacity building will address curriculum framework, literacy, learning standards, competency-based approach, stage-wise pedagogy, latest pedagogies regarding

foundational literacy and numeracy, formative and adaptive assessment of learning outcomes, textbooks and materials, and experiential learning. Also, teachers must be oriented on how to leverage local resources, particularly for Vocational Education, Physical Education and Well-being, and Art Education. Continued support will be provided by the block-level and cluster-level functionaries. Special shorter local teacher education programmes shall be available in the BIETs and DIETs for promoting local professions, knowledge and skills.

As per NEP 2020, it is recommended that 50 hours of CPD every year will be offered to the teachers and head teachers. Autonomy will be given to teachers to choose activities according to their needs. These will be offered in multiple modes, including 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. Teachers at different phases of their development journey, will have different development needs. Each phase requires exposure to different content. Within each phase, the learning experience needs to be holistic and complete to a point that it can help teachers to bring about sustained change in their practice, and move to the next phase.

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, so that they can share best practices. Such leaders will also be given CPD opportunities to participate in content and pedagogy, with a focus on preparing and implementing pedagogical plans based on competency-based education. Evaluation of CPD will focus more on the impact on school and classroom processes.

Integrated CPD guidelines may be developed focusing on specific stages, i.e., foundational, preparatory, middle and secondary. The guidelines will outline the details of planning, module/material development, implementation strategies including use of technology and resources required. The content of the CPD would include generic concerns, subject specific competency-based pedagogy approach and systemic concerns. Capacity building for Mathematics, Languages, Science, Social Science, and other subjects in the Secondary Stage can be in the form of intensive face-to-face programmes to be conducted for about 10 days. This must be supplemented by single-day interactions at the block and cluster levels. Similarly, capacity building in 'The World Around Us', Art Education, Vocational Education, Physical Education and Well-being, and education in interdisciplinary areas, must take into consideration the existing realities. For the first few years, after the implementation of the SCF, teachers who are not necessarily qualified to teach these subjects will also need to help students attain Curricular Goals adequately, as per the design of the curriculum. For these teachers, intensive face-to-face programmes must be conducted for 10 days twice in the first year after implementation of the SCF, totalling 20 days. A calendar of five follow-up on-site visits by Resource Persons for at least one day must be prepared between the two sets of face-to-face interaction.

7.5 Professional Standards for Teachers

Teachers lie at the heart of the education system, the efficacy of which largely depends on professional competencies of teachers. In the modern educational scenario, teachers are expected to align their curricular processes with the goals of the 21st century education

including SDG 4, while building upon India's traditions, cultural ethos and value systems. This framework intends to inform teachers regarding the competencies expected from them, to create scope for upgrading their competencies and also to put in place a teacher appraisal system that will give due recognition to them on the basis of their merit and innovative practices.

A common set of guiding principles called the Odisha State Professional Standards for Teachers (OSPST) will be developed by the TE and SCERT, the academic authority of the state of Odisha, preferably by 2025. The task would be carried out by a State Professional Standard Setting Body (SPSSB) constituted by the TE & SCERT specifically for the purpose of formulating the standards for the teacher competencies and appraisal. The SPSSB will consist of the faculties of the TE & SCERT, and may include members/special invitees conversant with the curriculum and pedagogical processes in Odisha's school education system. The terms of reference for the SPSSB would be to:

a) map out the competencies and the roles, teachers are expected to perform at all stages of school education from the foundational stage to the secondary stage

b) outline the standards for teacher performance appraisal to be carried out on a periodic basis

c) chalk out the design of pre-service and in-service teacher education programs to foster expected teacher competencies

d) suggest the parameters of a supportive environment for improving teacher motivation and task engagement

The development of this guiding framework would be carried out in consultation with teachers from across all levels and regions, educationists having history of contributions to school education, expert organizations in teacher preparation, teacher development and vocational education, and distinguished faculties in the education departments of higher education institutions.

Teachers, who lag behind in expected set of competencies in performing their roles at all stages of school education, will be trained, in a phase-wise manner, to attain the required competencies. Teacher performance appraisal will form the basis for all aspects of career management including professional development initiatives, promotion, salary increases and other forms of recognition. The results of teacher performance appraisal as per the appraisal system set by the SPSSB will primarily guide decisions related to promotions and recognitions of teachers, which by all counts, need not be based on the length of tenure or seniority. The set of professional standard guidelines will be reviewed in 2028, i.e., after three years of its implementation on the basis of its effectiveness for the system, and will be revised as per need, the objective being to ensure a cadre of teachers with requisite professional competencies. Thereafter, the standard set of guidelines will be reviewed and revised every five years, if the need be, on the basis of rigorous evidence-based research data from the field.

Key Takeaways

1. Multidisciplinary universities and institutions will offer the four-year Integrated Teacher Education Program (ITEP) with specializations in subjects and stages of education: Foundational, Preparatory, Middle, and Secondary.
2. Stand-alone Teacher Education Institutes (TEIs) will be restructured to multidisciplinary institutes to start ITEP. These institutions will also include a 2-year B.Ed. program for those who have already received a Bachelor's degree in a specialized subject. A 1-year B.Ed. may also be offered for candidates who have received a 4-year undergraduate degree in a specialized subject or a post-graduate degree in a specialty and wish to become a subject teacher in that specialty.
3. Necessary steps will be taken to provide adequate and accommodative physical resources, classrooms, laboratories and library and appointment of adequate teacher educators in TEIs. Resources of existing MDIs may also be shared with teacher education program.
4. Ph.D. programs should be reoriented and strengthened to emphasize research in pedagogy, strengthening teaching and learning practices.
5. The existing curriculum of teacher education is to be revisited and revised to promote multilingualism, holistic development, and inclusiveness. It is to be contextualized with reference to the Indigenous culture of India, especially Odisha.
6. All the 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 program.
7. TEIs should strengthen partnerships with SCERT, DIETs, Schools, and communities to provide hands-on training and experiential learning.
8. Continuous Professional Development training and activities for stage-specific teachers will be designed and implemented by DIETs, CTEs, and IASEs for respective stages of school education.
9. TEIs will organize professional development activities through blended learning platforms such as SWAYAM and DIKSHA, and encourage faculty to create and share high-quality e-resources, expanding the digital repository for the state and enhancing access to diverse teaching learning materials.
10. It is recommended that 50 hours of CPD every year will be offered to teachers and head teachers. Evaluation of CPD will focus more on the impact on school and classroom processes.
11. Integrated CPD Guidelines may be developed focussing specific stages, i.e., foundational, preparatory, middle and secondary stages.
12. A common set of guiding principles called the Odisha State Professional Standards for Teachers (OSPST) will be developed by a State Professional Standard Setting Body (SPSSB) constituted by the TE & SCERT, preferably by 2025. Teacher performance

appraisal will form the basis for all aspects of career management including professional development initiatives, promotion, salary increases and other forms of recognition.

Chapter 8
Systemic Reform and Implementation

The NEP 2020 proposes several reforms in education system, which would contribute to transform India into an equitable and vibrant knowledge society and attaining its vision to become a knowledge super power. Aligned with the vision of the Policy, the Odisha Curriculum Framework for School Education, 2025 (OCF-SE, 2025) proposes the state Department of Education to bring about reform in the key aspect of School Education and implement them for a better future of students in Odisha

The NEP, 2020 aims to develop an educationally robust and aspirational education system for our children, which would enable them irrespective of their background to excel in their own areas of interest and choice. The new curricula for different stages of school education in Odisha will foster a system that builds character of each individual learner and enables all to be humane, healthy, ethical, creative, rational, compassionate, competent and caring individuals, who would acquire the desired knowledge, skills, values and dispositions through quality education.

Education would play an important role for the holistic transformation of society. It would aim to promote justice, equity, humanitarian beliefs and practices, prosperity, and sustainable development rooted in Indian ethos and culture. It would enrich India's economic growth, social justice and equality, research, scientific and technological advancement, environmental sustainability, and cultural revitalization. The education system would assist students in their holistic development through appropriate curricula, environment, and culture in schools in synchronization with the societal goals.

The Indian worldview and traditional knowledge system of '*Vasudhaiva Kutumbakam*' (The World is One Family) guides the roadmap of the NEP, NCF and SCFs. This would prepare children and youth as compassionate and creative leaders to carry knowledge and respect their environment and treasures. The content and pedagogical processes in school education would promote greater sensitivity and caring attitude in schools across the state. Education other than enriching subject specific competencies of students would also strengthen health and well-being, art and craft making skills, and vocational education. This will help in ensuring the development of all aspects and capabilities of learners, and help to make education more well-rounded, useful, engaging, and fulfilling to the learner.

The state curriculum would promote 21st century learning skills including key capacities, values, and dispositions, and prepare all students to become good, fulfilled, and productive

human beings in today's rapidly changing world. These include: scientific temper and evidence-based critical thinking; creativity and innovativeness; sense of aesthetics and art; oral and written communication; multilingualism; health and nutrition; mental and physical fitness and well-being; collaboration and teamwork; problem solving and logical reasoning; ethical and moral reasoning; digital literacy, coding, and computational thinking; knowledge and practice of human and constitutional values; empathy, inclusion, and pluralism; fundamental duties; citizenship skills and values; environmental awareness and sensitivity; cleanliness, sanitation and hygiene; cultural literacy and identity; rootedness and pride in India; and knowledge of current affairs and critical issues facing local communities, states, the country, and the world.

The Odisha Curriculum Framework for School Education (OCF-SE, 2025) would promote Competency-based Learning enriching Knowledge, Capacities, Values and Dispositions of all learners. For this, it would reduce the content load in each subject area to the core essentials in order to make time and space for more effective pedagogy, including more multi and inter-disciplinary, experiential, discussion-based, and activity-based learning. All of this together would result in a deeper disciplinary understanding of the subjects and develop relevant capacities, values, and dispositions.

8.1 Curriculum Framework Literacy for Stakeholders

All the stakeholders involved in the implementation of the Curriculum Framework, including Teachers, Head Teachers, Principals, and the Syllabus and TLM developers; and all the stakeholders in the ecosystem including personnel in academic and administrative support structures. Parents and community members must be Curriculum Framework literate, so as to be able to understand changes in curriculum and learning processes. This program should be conducted in a blended mode soon after the implementation of the Curriculum Framework.

The approach to capacity building of Teachers to implement the Curriculum Framework should preferably be in face-to-face mode and must be supplemented with digital material, relevant handbooks and training materials. Capacity building programs will be organized by DIETs with support provided by the block-level and cluster-level functionaries.

Broadly, the modules for capacity building will address Curriculum Framework literacy, Learning Standards, Competency-based approach, Stage-wise pedagogy and assessment, textbooks and materials, and experiential learning. Also, Teachers must be oriented on how to leverage local resources, particularly for the newly introduced courses such as Vocational Education, Physical Education and Well-being, and Art Education.

The state may plan to constitute state resource group (s) for NEP orientation and familiarization with NCF-FS, 2022, NCF-SE, 2023 and OCF-SE, 2025. Other than this, various bilateral partners and other Civil Society Organizations (CSOs) can also organize various seminars and conferences on NEP 2020. State may enable senior officials to benefit from these processes in an organized manner.

8.2 Restructuring of School Stages

The NEP 2020 has modified the school education system, with a new pedagogical and curricular restructuring of 5+3+3+4, covering ages 3-18. This consists of 5 years of

Foundational Stage (3-8 years of age), 3 years of Preparatory Stage (8-11 years of age), 3 years of Middle Stage (11-14 years of age), and four years of Secondary Stage (14-18 years of age). Although, the Government of Odisha has initiated the process of restructuring school education, aligned with this new structure, by introducing *Shishuvatika* (5–6-year-olds) at the Primary stage, the initial 2 years of Pre-school education (3-5-year-olds) are still managed by the Department of Women and Child Development (WCD).

The re-structuring of school Stages should be completed soon, as envisaged in NEP 2020.

a. All the three years of Pre-school Education (3-6 years of age) needs to run in formal schools as an integral part of the Foundational Stage, aligned with NEP 2020. Thus, the pre-school education spanning 3 years of duration will be named *Shishuvatika-1, Shishuvatika-2, and Shishuvatika-3.*

b. Currently, the Secondary Stage of education (Grades 9 to 12), further divided in to two stages such as Stage 1 (Grades 9 and 10) and Stage 2 (Grades 11 and 12), does not function under one roof everywhere. In many cases stage 2 (Grades 11 and 12) is attached to Higher Education Institutions, and Stage 1 (Grades 9 and 10) remains as a part of School Education. Steps will be taken to put both the Stages of Secondary Stage under one roof everywhere.

8.3 Creating Appropriate Environment for Learning

Over the years, the physical environment in schools, on average, has improved with availability of basic infrastructural facilities. The OCF-SE, 2025 aims to use the infrastructure effectively and promote an inclusive learning environment for all students. A safe and stimulating physical environment can make schooling a positive experience, and attract every student to come to school every day. Therefore, it is important to design school infrastructure in a way that addresses learning requirements and allows for play, gatherings, and interaction with others.

Schools must take measures to make the physical environment accessible for students with disabilities. At the least, ramps must be provided for wheelchair access, and lifts can be provided in schools that need them. Both ramps and stairs should have handrails. Tactile pavers to guide people and students with disabilities will be placed judiciously, particularly in toilets and in areas near drinking water units.

a. In case of CwSN, we need to share some personal information related to their disability with teachers and SMC so as to address the specific needs with reasonable accommodations, and alternate methods of teaching-learning and assessments.

b. Schools must have sufficient well-ventilated and well-lit classrooms. The design of classrooms must take into consideration accessibility for all students and people with disabilities.

c. Depending on the space available in the school, three types of libraries, such as School Library, Classroom Library Corner, and Community Library can be set up. Although laboratories are commonly associated only with science, schools must aim to expand

the idea of a laboratory to other subjects (e.g., social science laboratory, language laboratory) as well.

d. The essential facilities like Dining Area, Drinking Water, Toilets, Supply of Water and Electricity will be provided in every school.

8.4 Ensuring an Enabling Environment, Autonomy and Accountability for Teachers

Teachers need resource-rich, motivating environment, and continuous opportunities for professional learning and interaction. In order to make the teachers feel a sense of pride in belonging to a vibrant professional group, adequate and safe physical infrastructure, facilities, and learning resources with safe drinking water, functioning toilets with running water, and basic hand washing facilities, as well as the infrastructure and teaching materials necessary to teach students effectively will be ensured.

Teacher autonomy and accountability are the consequences of teacher capacity and the environment in which they work. For example, if teachers do not have a strong knowledge base, they will not be able to exercise autonomy. Teachers will have the pedagogic autonomy to plan and organize content, decide the sequence and methods of teaching students as the situation demands, along with ways of assessing their learning. However, all this must be based on the prescribed Curricular Goals, Competencies, Learning Outcomes, and pedagogical approaches and principles.

8.5 Multilingualism and Language of Instruction

Odisha's linguistic diversity reflects its rich cultural identity. Odia language has been declared as a classical language by the Government of India because of its historical significance and rich cultural heritage. Although it is the official language spoken by more than 80% of the State's population, many regional and tribal languages are spoken in different regions of Odisha. Aligned with the recommendations of the NEP 2020, OCF-SE, 2025 emphasizes exposure of children to different languages with special emphasis on mother tongue, and proposes the following:

a. Child's mother-tongue will be the medium of instruction, at least up to preparatory stage and/or beyond in public and private schools.

b. At the Foundational Stage (Pre-school to Grade 2) and Preparatory stage (Grades-3 to 5), students will learn two languages, including mother-tongue/home language (Language 1) and any language other than Language 1 (Sanskrit/Hindi/English, etc.) as Language 2.

c. At the Middle Stage (Grades 6 to 8) and Secondary Stage 1 (Grades 9 and 10), students will learn three languages, including mother-tongue/home language as Language 1; any language other than Language 1 (Sanskrit/Hindi/English, etc.) as Language 2; and any language other than Language 1 and language not opted as Language 2 as Language 3. Of these three languages, at least two will be native to India. This is aligned with the "three-language formula" proposed for these two stages in NEP 2020.

d. At Secondary Stage 2 (Grade-11 and 12), two languages, at least one of which is native to India, will be chosen by students from the pool of language courses offered by the state.

8.6 Pre-Service Teacher Education

As colleges and universities move towards becoming multidisciplinary, they will offer Integrated Teacher Education Program (ITEP), B.Ed., M.Ed., and Ph.D. degrees in education. To this end, all multidisciplinary universities and colleges will establish, education departments. Moreover, all stand-alone TEIs will be required to convert to multidisciplinary institutions, since they will have to offer the 4-year Integrated Teacher Preparation Program. The HEIs offering the 4-year integrated B.Ed. may also run a 2-year B.Ed. program for students, who have a Bachelor's degree in a specialized subject; a 1-year B.Ed. for candidates who have a 4-year undergraduate degree in a specialized subject or a Master Degree.

8.7 Continuous Professional Development (CPD) of Teachers

The professional development of Teachers must be such that they become competent and reflective individuals. Teachers must engage continuously with their professional development through a variety of means, e.g., school-based subject group members, class teachers, teachers teaching at a particular stage, journal writing, documenting one's teaching experiences, and writing articles for various education periodicals. Each teacher will be expected to participate in at least 50 hours of CPD opportunities every year.

8.7.1 Mentoring and Support to Teachers

NCERT, SCERTs, DIETs, ETEIs, BRCs, CRCs, and retired teachers can provide academic mentoring and support to schools and Teachers through the development of support material, capacity-building sessions, on-site visits, and quality monitoring and supervision.

8.7.2 Recruitment and Career Progression

In Odisha, the Secondary Stage 2 (grades 11-12), functions in Higher Education Institutions baring in a few places. The teachers at this stage mostly do not possess any teacher education qualification (B. Ed., B. Sc. B. Ed., BA B. Ed., or, B. P. Ed., etc.) as a result of which they do not qualify to teach at the Senior/Higher Secondary Stage 2 (grades 11-12) as recommended under NEP, 2020. Keeping in view the service security of large number of such teachers the following measures may be considered.

a. The existing teachers of the state with CT/D. El. Ed. qualification may continue to work at the Foundational Stage. All teachers will have the opportunity to progress in their career (in terms of salary and promotions) while continuing to serve as teachers in the same stage of education.

b. The existing teachers with B. Ed., B. Sc. B. Ed., BA B. Ed., or, B. P. Ed. may continue to work at Secondary Stage 1 (grades 9-10).

c. The existing teachers with Post Graduate qualifications in relevant subjects, but without any teacher education qualification (B. Ed., B. Sc. B. Ed., BA B. Ed., or, B. P. Ed., etc.)

may continue to teach at Senior/Higher Secondary Stage 2 (grades 11-12). These teachers will be given opportunity to obtain B. Ed. degree B. Ed., B. Sc. B. Ed., BA B. Ed., or, B. P. Ed., etc. as in-service teachers from recognized Teacher Education Institutes within a stipulated time period.

All categories of teachers stated above need to have the opportunity to progress in their career, in terms of salary and promotions, while continuing to serve as teachers in the same stage of education.

NEP 2020, para 5.18 speaks of career growth opportunities across all stages of school education. For this, service conditions of teachers must be set to attract and retain talented teachers in the profession.

a. All Teachers, from the Foundational Stage to the Secondary Stage, will be recruited with standard service conditions as per their work requirements and with the same salary structure.

b. All teachers will have the opportunity to progress in their career (in terms of salary and promotions) while continuing to serve as teachers in the same stage of education.

c. Teachers can also make a career shift to becoming teacher educators, or academic and administrative functionaries, on the fulfilment of specified criteria, including additional certification.

8.8 Approaches to Board Examinations

The current practice of Board examinations largely tests rote memory and a very narrow range of Competencies. This gives an incomplete and/or incorrect picture of student learning. Most test instruments are not backed by clear and detailed marking schemes, which leads to subjectivity by evaluators and questions of consistency. Thus, there remain serious concerns over the validity and reliability of these tests at the current time. Following are the main changes to be made in the system aligned with NEP 2020:

a. Board examinations will be conducted for Grades 10 and 12. However, all students will take school examinations in Grades 3, 5, and 8, which would preferably be school-based.

b. There will be a single body, namely "Board of School Education, Odisha", which would conduct all the Board Examinations (External Examinations) will be.

c. Board examinations will be redesigned to encourage holistic development, allowing students to choose many of the subjects in which they will take Board exams;

d. The burden of the Board examinations on students must be reduced through multiple actions, *inter alia*, making them easier and lighter with reduced content load, focusing on competencies.

e. The assessment in Vocational Education, Art Education, and Physical Education and Well-being will be demonstration-based and not written-exam based. It is

recommended that 75% of weightage in overall certification be given to such demonstration-based assessment, and only 25% to written examination.

f. The assessment in science and other subjects will be demonstration-based with 20-25% weightage in the overall certification of the subject.

8.9 Development of Curriculum, Textbooks and Printing of Textbooks

At present, the curriculum, textbook development, and training for grades 1 to 8 are done by the Directorate of Teacher Education and SCERT; and for classes 9 and 10, it is done by the Board of Secondary Education. The Council of Higher Secondary Education (CHSE) looks into the curriculum development and training and for classes 11 and 12. The textbook Bureau of Higher Education Department develops the textbooks for classes 11 and 12.

The textbook printing work for classes 1 to 8 is carried out by the Directorate of textbook Production and Marketing (TBPM), Odisha. The Board of Secondary Education (BSE) is responsible for textbook development and printing for classes 9 and 10, and printing of textbook for classes 11 and 12 is done by the textbook Bureau of Higher Education Department.

In order to streamline the process, it is recommended that the Directorate of Teacher Education and SCERT will be strengthened, aligned with the structure of NCERT, for the development of curriculum, textbooks, and training for all grades of school education spanning from *Shishuvatika* to class 12. The Directorate of TBPM should be strengthened for undertaking printing of textbooks, modules, and materials for all classes from *Shishuvatika* to class 12.

8.10 Community Involvement and Ownership

There was a time in the past when schools were established, owned, and run by the village and local communities. But modern schools are either run by the State or certain societies and trusts. In this scenario, the onus of initiating and sustaining the participation of parents and families and the community lies with the school staff and its management bodies. The School Management Committee (SMCs) is the official mechanism through which community participation is ensured.

A child is born into a family. A child's growth is possible only with the support of parents and family members. Development of young children takes place in different atmospheres such as home where they are surrounded by their parents, grandparents and other family members. The school day is only 6 hours. He/she spends nearly 18 hours at home and community. A child's personality develops in a family environment. Parents are well aware of their child's strengths and weaknesses. Children can express their feelings to their parents. Parents can create a conducive environment for the child by learning about the child development. Therefore, proper communication between the school and the parents can provide a conducive environment for the development of the child and his development can be in the right direction.

The schools' relation should not be limited to current group of parents and families. The larger community from where students come to school should also be involved systematically in school processes to whatever extent possible.

For enabling the involvement of parents and families the NCFSE 2023 suggests for (i) inviting parents or families and community to school; (ii) orientation meetings for parents and families; (iii) parent-teacher meetings; (iv) building perspectives among parents, families and community on aspects of education and school processes and needs; and (v) involvement of parents, families and the community as resource persons.

The OCF-SE, 2025 suggests the following to engage community in school development process:

a. When family and parents come for admission of their children, an orientation on what the school stands for, its teaching learning processes and the expectation from parents and families is necessary.

b. While parent-teacher meeting (PTM) is a forum through which larger parent bodies engage with and contributes to school processes, communication with parents and families need to be frequent and on-going. Regular parent-teacher meeting, as per existing community participation rule of the state, should be ensured by the Block and Cluster level education functionaries.

c. Schools should involve trained social workers and skilled people in the society to offer their services, *inter alia* imparting training in different areas, e.g., animal husbandry, wood work, book binding, sculptures making, organic manure making, first aid, food and hygienic, etc.

d. Trained social workers, Sarpanch, Ward Members and other PRI members of the community shall be involved in increasing the attendance rate in the school, decrease the drop out and facilitate such students back to school etc.

e. Schools would find an occasion to be celebrated as *"Samarpana Diwas"* in their school. On this day, community members can donate any usable material or money according to their capacity and interest for school development.

f. Teachers should participate in the village festivals and cooperate with them voluntarily.

g. The school should be a centre for social consciousness (*Samajika Chetna Kendra),* wherein various community awareness programs as well as cultural programs can be organised.

8.11 Development of Learning Teaching Materials (LTMs)

The NCERT is developing new Learning Teaching Materials (LTMs) including textbooks under NEP following the guiding principles of NCF-FS and NCF-SE for all stages: foundational, preparatory, middle, and secondary. The state would develop textbooks for these stages either by contextualizing these books or by developing its own textbooks. The SCERT would constitute teams in different subject areas for different stages and organize series of workshops to develop syllabus and contextualize NCERT textbooks for the state.

Other than these, the SCERT would also develop teacher handbooks, bridge course contents for different subjects to enable teachers facilitate appropriate learning activities and enable students to learn desired standards. SCERT would also develop and contextualize other

teaching learning materials including *Jaadui Pitara* and other materials.

8.12 Improving Quality of Education through Assessment, Accreditation, and Evolving Credit Framework

The following the guidelines of the NEP 2020 should be implemented in the state.

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.

b. The educational operations and service provision for the public school system of the State will be handled independently by the Directorates of School Education (including the offices of the DEO and BEO, etc.).

c. To ensure that all schools of the state, including private, public, and philanthropic, follow certain minimal professional and quality standards, the State will set up an independent, body called the Odisha School Standards Authority (OSSA). The OSSA 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.

d. The SCERT will develop a School Quality Assessment and Accreditation Framework (SQAAF) through wide consultations with all stakeholders. This would be used for strengthening of CRCs, BRCs, and DIETs, developing them into vibrant institutions of excellence.

e. The state will develop a credit framework to be followed by all schools at the secondary education stage. This would remove the distinction between arts, science, social sciences and commerce, etc. giving credits for every academic/ skill/ experience. This would also increase focus on innovation, complement the demographic dividend allowing students to attain NSQF-approved foundational skills developed by industry and be more employable.

8.13 Effective Governance through School Complexes/Clusters

The isolation of small schools has a negative effect on education and the teaching-learning process. Teachers and students function best in teams. Small schools also present a systemic challenge for governance and management. One possible mechanism for addressing the above challenges, as stated in NEP 2020, would be the establishment of a grouping structure called the school complex, consisting of one secondary school together with all other schools and Anganwadis, in a radius of five to ten kilometers. The key benefits of the school complex/cluster will be greater resource efficiency and more effective functioning, coordination, leadership, governance, and management of schools in the cluster.

In Odisha, the following steps will be taken to attain these benefits:

a. From the point of view of convenience, all the schools in a Gram Panchayat will form a school complex/cluster with secondary school at its headquarters as the nodal school.

b. Steps will be taken to introduce art, music, language, vocational subjects, physical education, and other subjects in the schools under the cluster through the sharing of teachers and resources in these subjects.

c. The State Department of School Education (DSE) will delegate authority to the school complex/cluster, to make it a semi-autonomous unit.

d. The District Education Officer (DEO) and the Block Education Officers (BEOs) will interact with each school complex/cluster as a single unit and facilitate its work.

e. School Complex/Cluster Development Plans (SCDPs) will be prepared using School Development Plans (SDPs) as the basis. The SCDP will also involve the plans of all other institutions associated with the school complex, e.g., vocational education institutions.

f. The school complex/cluster will be a model resource center with the state-of-the-art ICT tools; required teaching workforce, e.g., art teacher, vocational teachers, counsellors, special educators to handle children with disability, and physical education teacher; and required infrastructure, e.g., library, science labs, computer labs, skill labs, playgrounds, sports equipment and facilities, etc. All these resources will be shared among the schools across the cluster.

8.14 Strengthening and Expansion of Vocational Education

Since, vocational education has been considered as one of the core school subjects, it will be integrated into mainstream education from middle stage to secondary stage in all schools in a phased manner, allowing every child to learn at least one vocation.

a. Steps will be taken to expose students to Vocational Education at an early age, allowing all students in Grades 6-8 to participate in a 10-day program, where they intern with local vocational experts

b. Specialized Vocational Education should be provided at Stage-II of the secondary stage. Internship opportunities available to students throughout Grades 6-12 to learn vocational subjects. Towards this, secondary schools will also collaborate with ITIs, polytechnics, local industry, etc.

c. Skill labs will also be set up and created in in nodal schools in a hub and spoke model which will allow other schools to use the facility.

d. The possibility of offering vocational courses through Open & Distance Learning (ODL) mode will also be explored.

8.15 Ensuring Professional Standards for Teachers and Teacher Educators

A common set of guiding principles called the Odisha State Professional Standards for Teachers (OSPST) will be developed by the TE and SCERT, the academic authority of the state of Odisha, preferably by 2025. The task would be carried out by a State Professional Standard Setting Body (SPSSB) constituted by the TE & SCERT specifically for the purpose of formulating the standards for the teacher competencies and appraisal. The SPSSB will consist of the faculties of the TE & SCERT, and may include members/special invitees conversant with the curriculum and pedagogical processes in Odisha's school education system.

8.16 Resource Mobilization: Human, Material, Financial

Following the recommendation of NEP 2020, the OCF-SE, 2025 also commits to significantly raising educational investment to the recommended level of 6% of GDP. This is extremely critical for achieving the high-quality and equitable public education system that is truly needed for the State's future economic, social, cultural, intellectual, and technological progress and growth.

As prescribed in the Policy, OCF-SE, 2025 also calls for the rejuvenation, active promotion, and support for private philanthropic activity in the education sector. In particular, over and above the public budgetary support, which would have been otherwise provided to them, any public institution can take initiatives towards raising private philanthropic funds to enhance educational experiences.

References

Department of School and Mass Education, Government of Odisha. (2014). Envisioning teacher education Odisha: A road map for reform.

Department of School and Mass Education, Government of Odisha. (2016). State policy on continuing professional development of education functionaries (State training policy).https://scertodisha.nic.in/wp-content/uploads/2019/04/Final%20State%20Training%20Policy%2016.11.pdf

Focus Group Paper on Teacher Education Odisha (2021).from https://ncf.ncert.gov.in/#/web/home

MHRD (2020).National Education Policy 2020. Government of India, New Delhi. https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf

Ministry of Human Resource Development. (2020). National Education Policy 2020. MHRD, Government of India, New Delhi.

Ministry of Education (2023). Concept note on Empowering DIETs as Centre of Excellence. Department of School Education and Literacy, MoE, New Delhi. https://dsel.education.gov.in/sites/default/files/guidelines/Concept_Note_DIET.p df

NCERT, (2023),AIL, Handbook for teachers Teaching Classes I-V, (Foundational and Preparatory stage).

NCERT (2023), AIL, Handbook for teachers Teaching Classes VI-VIII, (Middle stage).

NCF (2022), State Position Paper, Art Education, Odisha, National Curriculum Framework, National Council of Educational Research and Training, New Delhi

NCERT (2022). Guidelines for 50 Hours of Continuous Professional Development for Teachers , Head Teachers and Teacher Educators Based on National Education Policy 2020,New Delhi. https://ncert.nic.in/pdf/Guidelines50HoursCpd.pdf

NCERT (2024).National Curriculum Framework for School Education 2023.New Delhi. https://ncert.nic.in/pdf/NCFSE-2023-August_2023.pdf

NSCNCF (2022).National Curriculum Framework for Foundational Stage 2022. National Steering Committee for National Curriculum Frameworks, New Delhi. https://ncert.nic.in/pdf/NCF_for_Foundational_Stage_20_October_2022.pdf

University Grants Commission. (2022, September). Guidelines for transforming higher education institutions into multidisciplinary institutions. https://www.ugc.gov.in//e-book/HEI_Guidelines/mobile/index.html

Curricular Goals & Competencies

A. Foundational Stage

Domain: Physical Development

CG-1 Children develop habits that keep them healthy and safe	C-1 Shows a liking for and understanding of nutritious food and does not waste food C-2 Practices basic self-care and hygiene C-3 Keeps school/classroom hygienic and organised C-4 Practices safe use of material and simple tools C-5 Shows awareness of safety in movements (walking, running, cycling) and acts appropriately C-6 Understands unsafe situations and asks for help
CG-2 Children develop sharpness in sensorial perceptions	C-7 Differentiates between shapes, colours, and their shades C-8 Develops visual memory for symbols and representations C-9 Differentiates sounds and sound patterns by their pitch, volume, and tempo C-10 Differentiates multiple smells and tastes C-11 Develops discrimination in the sense of touch C-12 Begins integrating sensorial perceptions to get a holistic awareness of their experiences
CG-3 Children develop a fit and flexible body	C-13 Shows coordination between sensorial perceptions and body movements in various activities C-14 Shows balance, coordination, and flexibility in various physical activities C-15 Shows precision and control in working with their hands and fingers C-16 Shows strength and endurance in carrying, walking, and running

Domain: Socio-Emotional and Ethical Development

CG-4 Children develop emotional intelligence, i.e., the ability to understand and manage their own emotions, and responds positively to social norms	C-17 Starts recognising 'self' as an individual belonging to a family and community C-18 Recognises different emotions and makes deliberate efforts to regulate them appropriately C-19 Interacts comfortably with other children and adults C-20 Shows cooperative behaviour with other children C-21 Understands and responds positively to social norms in the classroom and school C-22 Shows kindness and helpfulness to others (including animals, plants) when they are in need C-23 Understands and responds positively to different thoughts, preferences, and emotional needs of other children
CG-5 Children develop a positive attitude towards productive work and service or 'Seva'	C-24 Demonstrates willingness and participation in age- appropriate physical work towards helping others
CG-6 Children develop a positive regard for the natural	C-25 Shows care for and joy in engaging with all life forms

environment around them	

Domain: Cognitive Development

CG-7 Children make sense of the world around through observation and logical thinking	C-26	Observes and understands different categories of objects and relationships between them
	C-27	Observes and understands cause and effect relationships in nature by forming simple hypothesis and uses observations to explain their hypothesis
	C-28	Uses appropriate tools and technology in daily life situations and for learning
CG-8 Children develop mathematical understanding and abilities to recognise the world through quantities, shapes, and measures	C-29	Sorts objects into groups and sub-groups based on more than one property
	C-30	Identifies and extends simple patterns in their surroundings, shapes, and numbers
	C-31	Counts up to 99, both forward and backward, and in groups of 10s and 20s
	C-32	Arranges numbers up to 99 in ascending and descending order
	C-33	Recognises and uses numerals to represent quantities up to 99 with the understanding of decimal place value system
	C-34	Performs addition and subtraction of 2-digit numbers fluently using flexible strategies of composition and decomposition
	C-35	Recognises multiplication as repeated addition and division as equal sharing
	C-36	Recognises basic geometric shapes and their observable properties
	C-37	Selects appropriate tools and units to perform simple measurements of length, weight, and volume of objects in their immediate environment
	C-38	Performs simple transactions using money up to INR 100
	C-39	Develops adequate and appropriate vocabulary for comprehending and expressing concepts and procedures related to quantities, shapes, space, and measurements
	C-40	Formulates and solves simple mathematical problems related to quantities, shapes, space, and measurements

Domain: Language and Literacy Development

CG-9 Children develop effective communication skills for day-to-day interactions in two languages	C-41	Listens to and appreciates simple songs, rhymes, and poems
	C-42	Creates simple songs and poems on their own
	C-43	Converses fluently and can hold a meaningful conversation
	C-44	Understands oral instructions for a complex task and gives clear oral instructions for the same to others
	C-45	Comprehends narrated/read-out stories and identifies characters, storyline, and what the author wants to say
	C-46	Narrates short stories with clear plot and characters
	C-47	Knows and uses enough words to carry out day-to-day interactions effectively and can guess meaning of new words by using existing vocabulary
CG-10 Children develop fluency in reading and writing in Language 1	C-48	Develops phonological awareness and blends phonemes/ syllables into words and segments words into phonemes/syllables
	C-49	Understands basic structure/format of a book, idea of words in print and direction in which they are printed, and recognises basic punctuation marks

	C-50	Recognises all the letters of the alphabet (forms of akshara) of the script and uses this knowledge to read and write words
	C-51	Reads stories and passages with accuracy and fluency with appropriate pauses and voice modulation
	C-52	Reads short stories and comprehends its meaning – by identifying characters, storyline, and what the author wanted to say – on their own (L1)
	C-53	Reads short poems and begins to appreciate the poem for its choice of words and imagination
	C-54	Reads and comprehends meaning of short news items, instructions and recipes, and publicity material
	C-55	Writes a paragraph to express their understanding and experiences
	C-56	Shows interest in picking up and reading a variety of children's books
CG-11 Children begin to read and write in Language 2	C-57	Develops phonological awareness and are able to blend phonemes/syllables into words and segment words intophonemes/syllables
	C-58	Recognises most frequently occurring letters of the alphabet (forms of *akshara*) of the script and uses this knowledge to read and write simple words and sentences

Domain: Aesthetic and Cultural Development

CG-12 Develops abilities and sensibilities in Visual and Performing Arts and expresses their emotions through art in meaningful and joyful ways	C-59	Explores and plays with a variety of materials and tools to create two- and three-dimensional artworks in varying sizes
	C-60	Explores and plays with own voice, body, spaces, and a variety of objects to create music, role play, dance and movement.
	C-61	Innovates and works imaginatively to express a range of ideas and emotions through the arts
	C-62	Works collaboratively in the arts
	C-63	Communicates and appreciates a variety of responses while creating and experiencing different forms of art, local culture, and heritage

Positive Learning Habits

CG-13 Develops habits of learning that allows them to engage actively in formal learning environments such as a school classroom	C-64	Attention and intentional action: Acquires skills to plan, focus attention, and direct activities to achieve specific goals
	C-65	Memory and mental flexibility: Develops adequate working memory, mental flexibility (to sustain or shift attention appropriately), and self-control (to resist impulsive actions or responses) that would assist them in learning in structured environments
	C-66	Observation, wonder, curiosity, and exploration: Observes minute details of objects, wonders and explores using various senses, tinkers with objects and asks questions
	C-67	Classroom norms: Adopts and follows norms with agency and understanding

B. Language Education

For Language 1 (R1)

The Preparatory Stage

CG-1 Students develop oral	C-1.1	Converses fluently and meaningfully in different contexts
	C-1.2	Summarises core ideas from material read out in class

language skills using complex sentence structures to understand and communicate abstract ideas.	C-1.3	Makes oral presentations (show and tell, short welcome notes, anchoring of small events, short speeches, class debates)
CG-2 Students develop their reading skills through a basic understanding of different forms of texts (like prose and poetry), and different kinds of writing (like narrative, descriptive, argumentative, and analytical) by reading unfamiliar texts.	C-2.1 C-2.2 C-2.3	Applies varied comprehension strategies (inferring, predicting, visualising) to understand different texts Infers the author's intention behind writing the text material Draws essential conclusions from the material read
CG-3 Students develop the ability to write compound and complex sentence structures to express their understanding and experiences	C-3.1 C-3.2 C-3.3 C-3.4	Writes content keeping in mind the intended audience and purpose using compound and complex sentences Uses prewriting strategies like planning sequence of ideas, mind-mapping, graphic organizers Creates posters, banners, and invites, with appropriate information and purpose Proofreads and edits grammar and structure in their writing
CG-4 Students acquire a more comprehensive range of words in various contexts (of home and school experience) and through different sources.	C-4.1 C-4.2	Uses knowledge of homophones, word roots, affixes, suffixes, synonyms, and antonyms Discusses meanings of words and develops vocabulary by listening and reading a variety of texts or other content areas
CG-5 Students develop interest and preferences in reading.	C-5.1 C-5.2 C-5.3	Borrows books from the library regularly to be read at home Demonstrates interest in reading books in general and from the library Draws connections with books in the library by linking ideas learned from the textbook

The Middle Stage

CG-1 Students develop the capacity for effective communication using language skills for description, analysis, and response	C-1.1 C-1.2 C-1.3 C-1.4 C-1.5 C-1.6	Identifies main points and summarizes from a careful listening and reading of the text (news articles, reports, and editorials) Listens critically and paraphrases ideas (distinguishes between facts and opinions stated in panel discussions and debates) Listens to, plans, and conducts different kinds of interviews (structured and unstructured) Raises probing questions about social experiences using appropriate language (open-ended/closed-ended, formal/informal, relevance to context, with sensitivity) Writes different kinds of letters, essays, and reports in appropriate style and registers for different media for different audiences and purposes Creates content for audio, visual, or both for different audiences and purposes
CG-2 Students explore the form (poetry, prose, drama) and structure of different genres (humour, suspense, tragedy)	C-2.1	Identifies and appreciates different forms of literature (prose, poetry, drama) and styles of writing (narrative, descriptive, expository, persuasive)

and literary devices.	C-2.2 Identifies literary devices [simile, metaphor, personification (the alankaras), hyperbole (athishayokthi), and alliteration (anuprasa)] and idioms, proverbs, and riddles by reading a variety of literature C-2.3 Expresses through speech and writing their ideas and critiques on the various aspects of their social and cultural surroundings
CG-3 Students develop the ability to recognize basic linguistic aspects (vocabulary and sentence structure) and use them in oral and written expression.	C-3.1 Understands the basic linguistic aspects such as sentence style, punctuation, tense, gender, and parts of speech while reading different forms of literature C-3.2 Writes prose, poetry, and drama by using appropriate style and language C-3.3 Writes and edits articles, news reports, and essays with appropriate grammar to express his/her points coherently
CG-4 Students develop the ability to use language effectively in other curricular areas to comprehend concepts and share their understanding with others.	C-4.1 Comprehends the way words and sentences are used in different subjects across the curriculum C-4.2 Describes concepts in different subjects across the curriculum through the effective use of language
CG-5 Students develop the ability to enjoy reading and writing reviews, and use reading for references.	C-5.1 Reads, responds to, and critically reviews books of varied genres (fiction and non-fiction) C-5.2 Uses books and other media resources effectively in one's projects and other activities

The Secondary Stage

CG-1 Students use language for effective communication through writing various forms (essays, letters, articles, discussions, interviews, and public speeches) and for new media (email, audio, and visual material).	C-1.1 Uses language appropriate to social context, expresses agreements and disagreements with reasons and arrives at conclusions through discussion and debate C-1.2 Writes in different styles (narrative, descriptive, expository, persuasive) from one's own experiences and experiences of others C-1.3 Writes for real-life situations (invitations, speeches, condolence messages, notices, creative slogans, advertisements) and for school newsletter/magazine/ journal C-1.4 Scripts to inform and communicate ideas effectively with the use of technology
CG-2 Students develop an appreciation of the aesthetics in different genres (humour, suspense, tragedy) through analysis of style (narrative, descriptive, expository, persuasive) and content and employ these elements in their writing.	C-2.1 Distinguishes characteristics of works of literature from different periods (like early, medieval, contemporary) C-2.2 Analyses a piece of literary text by close reading, critiquing form and style, and interpreting possible meanings C-2.3 Composes literary text by using appropriate literary devices
CG-3 Students develop the ability to recognize basic linguistic aspects (vocabulary and sentence structure) and use them in oral and written expression.	C-3.1 Analyses, and evaluates the different audio and written material C-3.2 Argues with proper rationale by carefully evaluating premises

CG-4 Students develop the ability to use language effectively in other curricular areas to comprehend concepts and share their understanding with others.	C-4.1 Recognizes the multilingual nature of Indian society through different materials (selection of literature either translations or original text, documentaries, cinema) C-4.2 Appreciates the diversity of cultural ideas in the different works of regional literature C-4.3 Shows an understanding of the role of language in the formation of our identities and culture
CG-5 Students develop the ability to enjoy reading and writing reviews, and use reading for references.	C-5.1 Reads, responds to, and critically reviews books of varied genres (fiction and non-fiction) C-5.2 Uses books and other media resources effectively in one's projects and other activities

For Language 2 (R2)

The Preparatory Stage

CG-1 Students develop oral language skills using complex sentence structures to understand and communicate abstract ideas.	C-1.1 Appreciates poems, stories, and conversations, and locates important ideas in them C-1.2 Comprehends narrated/read-out stories and identifies characters, storyline, and author's view C-1.3 Converses fluently, meaningfully, and coherently in different contexts C-1.4 Makes oral presentations (class debates, short welcome notes, anchoring of small events, short speeches)
CG-2 Students develop fluency in reading and the ability to read with comprehension	C-2.1 Develops phonological awareness further by blending phonemes/ syllables into words and segments words into phonemes/ syllables C-2.2 Examines the basic structure of the text, the idea of words and sentences in print, and recognizes basic punctuation marks C-2.3 Reads stories and passages with accuracy and fluency with appropriate pauses and intonation C-2.4 Comprehends the meaning of stories, poems, conversations, posters, and instructions in a text by identifying characters, the main idea in the text, and connecting to their experiences C-2.5 Demonstrates interest in picking up and reading a variety of children's books
CG-3 Students develop the ability to express their understanding, experiences, feelings, and ideas in writing.	C-3.1 Writes a paragraph to express their understanding and experiences C-3.2 Creates simple posters, invites, and instructions with appropriate information and purpose C-3.3 Writes stories, poems, and conversations based on their imagination and experiences
CG-4 Students develop a comprehensive range of vocabulary in various contexts and through different sources.	C-4.1 Applies knowledge of homophones, word roots, affixes, suffixes, synonyms, and antonyms C-4.2 Applies contextual clues and language structure to make meaning while reading new material C-4.3 Discusses meanings of words and develops vocabulary by listening and reading a variety of texts or other content area

The Middle Stage

CG-1 Students develop independent reading comprehension and summarising skills of a variety of texts (stories, poems, extracts of plays, essays, articles, and news reports).	C-1.1 Identifies main points and summarizes from a careful reading of the text and responds coherently C-1.2 Makes own judgments and choices and evaluates the different texts (stories, poems, extracts of plays) C-1.3 Shows interest in picking up and reading a variety of books
CG-2 Students attain the ability to write about thoughts, feelings, and experiences of social events (village fairs, festivals, occasions).	C-2.1 Uses strategies to organize ideas and information to write for an intended purpose and audience C-2.2 Expresses experiences, emotions, and critiques on the various aspects of their surroundings in writing
CG-3 Students develop the capacity for effective communication using language skills for description, analysis, and response	C-3.1 Listens critically and raises probing questions about social experiences C-3.2 Writes different kinds of letters and essays in appropriate style and registers for different media for different audiences and purposes
CG-4 Students explore the structure of different literary devices and forms of literature.	C-4.1 Identifies and appreciates different forms of literature (samples of prose, poetry, and plays) C-4.2 Identifies literary devices such as simile, metaphor, personification (the alankaras), hyperbole (athishayokthi), and alliteration (anuprasa) by reading a variety of literature
CG-5 Students develop the ability to recognize basic linguistic aspects (vocabulary and sentence structure) and use them in oral and written expression.	C-5.1 Identifies the basic linguistic aspects such as sentence style, punctuation, tense, gender, and parts of speech while reading different forms of literature

The Secondary Stage

CG-1 Students use language for effective communication through various oral activities (discussions, interviews, public speeches) and writing activities (essays, letters, articles), including new media (email, audio, and visual material).	C-1.1 Uses language appropriate to social context, expresses agreements and disagreements with reasons, and arrives at conclusions through discussion and debate C-1.2 Writes in different styles (narrative, descriptive, expository, persuasive) from one's own experiences and experiences of others C-1.3 Writes for real-life situations (invitations, speeches, condolence messages, notices, creative slogans, advertisements) and for school newsletter/magazine/ journal C-1.4 Scripts to inform and communicate ideas effectively with the use of technology
CG-2 Students use language to develop reasoning and argumentation skills by engaging with a variety of	C-2.1 Analyses and evaluates the different audio and written material C-2.2 Argues with a proper rationale by carefully evaluating premises

written material.	

For Language 3 (R3)

The Middle Stage

CG-1 Students develop effective communication skills for day-to-day interactions, enhancing their oral ability to express ideas by describing and narrating.	C-1.1 Makes conversations relevant to the context C-1.2 Listens to varied texts (stories, poems, and conversations) and summarizes core ideas from the material that was listening to C-1.3 Makes oral presentations (class debates, short welcome notes, anchoring of small events, short speeches)
CG-2 Students develop fluency in reading and the ability to read with comprehension	C-2.1 Reads stories and passages with accuracy and fluency with appropriate pauses and intonation C-2.2 Comprehends the meaning of stories, poems, conversations, posters, and instructions and the main idea in the text
CG-3 Students develop the ability to express their understanding, experiences, feelings, and ideas in writing.	C-3.1 Writes a paragraph to express their understanding and experiences C-3.2 Writes letters, invitations, and instructions with the appropriate information, with relevance to the audience and purpose

Additional Curricular Goal

CG-1 Students develop an appreciation of the literary components in the literature of any Indian native language	C-1.1 Reads different samples of contemporary literature of any Indian native language C-1.2 Appreciates diversity in the literature of the language chosen through putting together of a small project

C. Mathematics Education

Preparatory Stage

CG-1 Understands numbers (counting numbers and fractions), represents whole numbers using the Indian place value system, understands and carries out the four basic operations with whole numbers, and discovers and recognizes patterns in number sequences.	C-7 Represents numbers using the place-value structure of the Indian number system, appreciates the key role of zero in this system, compares the sizes of whole numbers, and knows and can read the names of very large numbers. C-8 Represents and compares commonly used fractions in daily life (such as ½, ¼, etc.) as parts of unit wholes, as locations on number lines, and as divisions of whole numbers. C-9 Identifies relationships amongst operations and applies the four basic operations on whole numbers to solve daily life problems. C-10 Discovers, recognises, describes, and extends simple number patterns such as odd numbers, even numbers, square numbers, cubes, powers of 2, powers of 10, and Virahanka--Fibonacci numbers.
CG-2 Analyses the characteristics and properties of two- and three-dimensional geometric shapes, specifies locations and	C-2.1 Identifies, compares, and analyses attributes of two- and three-dimensional shapes and develops vocabulary to describe their attributes/properties. C-2.2 Identifies and builds a three-dimensional object from two-dimensional representations of that object.

describes spatial relationships, and recognises and creates shapes that have symmetry	C-2.3 Describes location and movement using both common language and mathematical vocabulary; understands the notion of map (najri naksha). C-2.4 Recognises and creates symmetry (reflection, rotation) in familiar 2D and 3D shapes. C-2.5 Discovers, recognizes, describes, and extends patterns in 2D and 3D shapes
CG-3 Understands measurable attributes of objects and the units, systems, and processes of such measurement, including those related to distance, length, mass, weight, area, volume, and time, using non-standard and standard units.	C-3.5 Measures using non-standard and standard units and recognises and appreciates the need for standard units. C-3.6 Uses an appropriate unit and tool for the attribute being measured. C-3.7 Carries out simple unit conversions, such as from centimetres to metres, within a system of measurement, and solves daily life problems. C-3.8 Devises strategies for estimating the distance, length, time, , perimeter (for regular and irregular shapes), area (for regular and irregular shapes), weight and volume. C-3.9 Deduces that shapes having equal areas can have different perimeters and shapes having equal perimeters can have different areas. C-3.10 Measures distance, length, perimeter, time, weight, area, and volume and to solve daily life problems.
CG-4 Develops problem-solving skills with procedural fluency, to solve mathematical puzzles as well as daily life problems, and as a step towards developing computational thinking.	C-4.3 Solves puzzles and daily life problems involving one or more operations on whole numbers. C-4.4 Selects appropriate methods and tools for computing with whole numbers such as mental computation, estimation, or paper and pencil calculation, in accordance with the context.
CG-5 Knows and appreciates the development of numeration through human history including the major contributions of India.	C-5.4 Understands the development of the representation of numbers through human history, from tallying (e.g., on the Lebombo bones), to Roman numerals, to the Mayan and Babylonian systems, leading up to the development of zero in India and the modern Indian system of writing numerals (from Yajurveda, story of Buddha, Bakshali Manuscript, Vasavadatta, Aryabhatiya, Brahmasphutasiddanta, Gwalior inscription, etc.) and its transmission to the world (due to Al-Kharizmi, Al-Kindi, Fibonacci, etc.)

Middle Stage

CG-1 Understands numbers and sets of numbers (Whole numbers, Fractions, Integers, and Rational numbers) looks for patterns, and appreciates relationships between numbers.	**C-1.4** Develops a sense for and an ability to manipulate (e.g., read, write, form, compare, estimate, and apply operations) large whole numbers of up to 10 digits and expresses them in scientific notation using exponents and powers. **C-1.5** Discovers, identifies, and explores patterns in numbers and describes rules for their formation (e.g., prime numbers, powers of 3, etc.) and explain relations between different patterns. **C-1.6** Explores and understands sets of numbers such as whole numbers, fractions, integers, and rational numbers, and their properties. **C-1.7** Represents rational numbers in decimal form as an extension of the Indian system of numeration 'past the decimal point'. **C-1.8** Explores the idea of percentage and apply it in solving problems. **C-1.9** Explores and applies fractions (both as ratios and in decimal form) in daily life situations.

CG-2 Understands the concepts of variable, constant, coefficient, expression, and (one variable) equation, and uses these concepts to solve meaningful daily life problems with procedural fluency	C-2.4 Extends the abstract representation of a number in the form of a variable or an algebraic expression using a variable. C-2.5 Forms algebraic expressions using variables, coefficients, and constants, and manipulates them through addition, subtraction, and multiplication. C-2.6 Poses and solves linear equations to find the value of an unknown, including to solve puzzles and word problems. C-2.7 Develops own methods to solve puzzles and problems using algebraic thinking.
CG-3 Understands, formulates, and applies properties and theorems regarding simple geometric shapes (2D and 3D)	C-3.1 Describes, classifies, and understands relationships among different types of two and three-dimensional shapes using their defining properties/attributes. C-3.2 Knows properties of lines, angles, triangles, quadrilaterals, and polygons, and applies them to solve related problems. C-3.3 Identifies attributes of three-dimensional shapes (cubes, parallelepipeds, cylinders, cones, etc.) and uses two-dimensional representations of three-dimensional objects to visualise and solve problems. C-3.4 Draws and constructs geometric shapes such as lines, parallel lines, angles, and simple triangles, with specified properties, using compass and straightedge.
CG-4 Develops understanding of perimeter and area for 2D shapes and uses them to solve day-to-day life problems.	C-4.1 Identifies, selects, and uses units of appropriate size and type to measure and examine the relationship between perimeter and area for 2D shapes (both regular and irregular shapes). C-4.2 Discovers, understands, and uses formulas to determine the circumference of a circle and the area of a triangle, parallelogram, and trapezium, and develops strategies to find the areas of more complex 2D shapes. C-4.3 Explores and uses Baudhayana's Theorem on right triangles and other fundamental geometric theorems to solve puzzles and everyday problems. C-4.4 Discovers and constructs tilings of the plane using 2D shapes and identifies and appreciates their appearances in art in India and around the world. C-4.5 Develops the notion of fractal and identifies and appreciates the appearances of fractals in nature and art in India and around the world.
CG-5 Collects, organises, represents (graphically and in tables), and interprets data/ information from daily life experiences.	C-5.1 Collects, organises data, and applies measures of central tendencies such as average/mean, mode, and median. C-5.2 Selects, creates, and uses appropriate graphical representations of data, including pictographs, bar graphs, histograms, line graphs, and pie charts.
CG-6 Develops mathematical thinking and the ability to logically and precisely communicate mathematical ideas.	C-6.1 Applies both inductive and deductive logic to formulate definitions and conjectures, evaluates and produces convincing arguments/proofs to turn these definitions and conjectures into theorems or correct statements, particularly in the areas of algebra, elementary number theory, and geometry.
CG-7 Engages with puzzles and mathematical problems and develops own creative	C-7.1 Applies creativity to develop one's own solutions to puzzles and other problems and appreciates the work of others to develop their own solutions.

methods and strategies to solve them.	C-7.2 Engages in and appreciates the artistry and aesthetics of puzzle-making, puzzle-posing, and puzzle-solving.
CG-8 Knows and appreciates the development of mathematical ideas over human history, and the contributions of past and modern mathematicians from India and across the world.	C-8.1 Recognises important mathematical contributions of India (e.g., zero, Indian numerals, ideas around infinity, concepts of algebra, etc.) as well as the contributions of specific Indian mathematicians (such as Baudhayana, Panini, Pingala, Aryabhata, Brahmagupta, Virahanka, Bhaskara, Madhava, and Ramanujan). C-8.2 Recognizes and appreciates how concepts (like the notion of number, from counting numbers, to 0, to negative numbers, to rational evolved over a period of time across different civilizations.
CG-9 Develops basic skills and capacities of computational thinking, namely, decomposition, pattern recognition, data representation, generalization, abstraction, and algorithms, in order to solve problems where such techniques of computational thinking are effective.	C-9.1 Approaches problems using programmatic thinking techniques such as iteration, symbolic representation, and logical operations and reformulates problems into series of ordered steps (algorithmic thinking). C-9.2 Identifies, analyses, and implements possible solutions to problems, with the goal of achieving the most efficient and effective combination of steps and resources and generalizes this process to a wide variety of problems.

Secondary Stage

CG-1 Understands numbers, ways of representing numbers, relationships among numbers, and number sets.	C-1.1 Develops a deeper understanding of numbers, including the set of real numbers and its properties. C-1.2 Uses deductive logic to prove theorems such as '$\sqrt{2}$ is an irrational number' and 'there are infinitely many prime numbers'. C-1.3 Uses inductive logic to prove theorems such as the recursion relation for Virahanka numbers, 'the sum of consecutive odd numbers starting with 1 is a square number', 'the sum of consecutive cubes starting with 1 is the square of a triangular number', etc. C-1.4 Explores that every counting number has a unique factorisation into prime numbers (fundamental theorem of arithmetic). C-1.5 Recognises and appropriately uses powers and exponents. C-1.6 Computes powers and roots and applies them to solve problems. C-1.7 Computes simple and compound interest and solve real-life problems.
CG-2 Discovers and proves algebraic identities and uses such identities to solve equations.	C 2.1 Learns the art of factoring polynomials. C 2.2 Applies the division algorithm to both integers and polynomials in order to solve problems such as those involving GCDs and LCMs. C 2.3 Models and solves contextualised problems using equations (e.g., simultaneous linear equations in two variables or single polynomial equations) and draws conclusions about a situation being modelled.
CG-3 Analyses characteristics and properties of two-dimensional geometric shapes and develops mathematical arguments to explain geometric relationships.	C-3.1 Describes relationships including congruence of two-dimensional geometric shapes (such as lines, angles, triangles) to make and test conjectures and solve problems. C-3.2 Proves theorems using Euclid's axioms and postulates – for triangles, quadrilaterals, and circles and applies them to solve geometric problems. C-3.3 Specifies locations and describes spatial relationships using coordinate geometry, e.g., plotting a pair of linear equations and

	graphically finding solution, or finding the area of triangle with given coordinates as vertices
CG-4 Derives and uses formulas to calculate areas of plane figures, and surface areas and volumes of solid objects.	C-4.1 Visualises, represents, and calculates the area of a triangle using Heron's formula. C-4.2 Visualises and uses mathematical thinking to discover formulas to calculate surface areas and volumes of solid objects (cubes, cuboids, spheres, hemispheres, right circular cylinders/cones, and their combinations).relationships including congruence of twodimensional geometric
CG-5 Analyses and interprets data using statistical concepts (such as measures of central tendency, standard deviations) and probability.	C-5.1 Applies measures of central tendencies such as mean, median, and mode. C-5.2 Applies concepts from probability to solve problems on the likelihood of everyday events.
CG-6 Begins to perceive and appreciate the axiomatic and deductive structure of mathematics. Uses stated assumptions, axioms, postulates, definitions, and mathematics vocabulary to prove mathematical statements and carry out geometric constructions.	C-6.1 Uses deductive and inductive logic to prove theorems about numbers, measurements such as areas and shapes. C-6.2 Visualises and appreciates geometric proofs for algebraic identities and other 'proofs without words'. C-6.3 Proves theorems using Euclid's axioms and postulates – for angles, triangles, quadrilaterals, circles, area related theorems for triangles and parallelograms. C-6.4 Constructs different geometrical shapes like bisectors of line segments, angles and their bisectors, triangles, and other polygons, satisfying given constraints.
CG-7 Begins to perceive and appreciate the axiomatic and deductive structure of Mathematics	C-7.1 Recognises the important contributions made by Indian mathematicians in the field of mathematics. C-7.2 Recognizes how concepts (like evolution of numbers, geometry, etc.) evolved over a period of time across different civilizations.
CG-8 Sharpens skills such as visualisation, optimisation, representation, and mathematical modelling, and their application in daily life.	C-8.1 Models daily life phenomena and uses representations such as graphs, tables, and equations to draw conclusions. C-8.2 Uses two-dimensional representations of three-dimensional objects to visualise and solve problems such as those involving surface area and volume. C-8.3 Employs optimisation strategies to maximise desired quantities (such as area, volume, or other output) under given constraints.
CG-9 Develops computational thinking, i.e., deals with complex problems and is able to break them down into a series of simple problems that can then be solved by suitable procedures/algorithms.	C-9.1 Decomposes a problem into sub problems. C-9.2 Describes and analyses a sequence of instructions being followed. C-9.3 Analyses similarities and differences among problems to make one solution or procedure work for multiple problems. C-9.4 Engages in algorithmic problem solving to design such solutions.
CG-10 Explores connections of mathematics with other subjects.	C-10.1 Applies mathematical knowledge and tools to analyse problems/situations in multiple subjects across science, social science, visual arts, music, and sports.

D. Science Education

Middle Stage

CG-1 Explores the world of matter, and its constituents, properties, and behavior	C-11	Classifies matter based on observable physical (solid, liquid, gas, shape, volume, density, transparent, opaque, translucent, magnetic, non-magnetic, conducting, non-conducting) and chemical characteristics (pure, impure; acids, bases; metals, non-metals; solutions, mixtures, separation techniques; elements, compounds)
	C-12	Describes changes in matter (physical and chemical change) and uses particulate nature to represent the properties of matter and the changes.
	C-13	Explains the importance of measurement, and measures physical properties of matter (volume, weight, temperature, density) in indigenous and standard units using simple instruments.
	C-14	Observes and explains the phenomena caused due to difference in pressure, temperature, and density (breathing, sinking-floating, water pumps in homes, cooling of things, formation of winds)
CG-2 Explores the physical world around them in scientific and mathematical terms	C-2.6	Describes one-dimensional motion (uniform, non uniform, horizontal, vertical) using physical quantities (position, distance, time – speed, and changes in speed) through mathematical and diagrammatic representations
	C-2.7	Describes how electricity works through manipulating different elements in simple circuits, and demonstrate the heating and magnetic effects of electricity
	C-2.8	Describes the properties of a magnet (natural and artificial, earth as a magnet)
	C-2.9	Demonstrates rectilinear propagation of light from different sources of light (natural, artificial, reflecting surfaces), and verify the laws of reflection through manipulation of light source and objects, and use of apparatus and artefact (plane and curved mirrors, pinhole camera, kaleidoscope, periscope)
	C-2.10	Observes and identifies celestial objects in the night sky using simple telescope and images (planets, stars, natural and artificial satellites, constellation, comets), and explains their role in navigation, calendars, and phenomena (phases of the moon, eclipse, life on earth)
CG-3 Explores the living world around us, and its interaction with the inanimate world in scientific terms	C-3.4	Describes the diversity of living things observed in the natural surroundings (insects, earthworms, snails, birds, mammals, reptiles, spiders, diverse plants, and fungi), and at a smaller scale (pond water, animal and plant bodies, other microscopic organisms)
	C-3.5	Distinguishes the characteristics of living organisms (need for nutrition, growth, and development, need for respiration, response to stimuli, reproduction, excretion, cellular organization) from non-living things.
	C-3.6	Analyses patterns of relationship between living organisms and their environment in terms of dependence on and response to each other
	C-3.7	Explains the conditions suitable for sustaining life on earth and other planets (atmosphere; suitable temperature-pressure, light; properties of water)
CG-4 Understands the components of health, hygiene, and well being	C-4.3	Undertakes a nutrition-based analysis of food components with reference to Indian and modern dietary and culinary practices, and explain the effect of nutrition on health
	C-4.4	Examines different dimensions of diversity of food – sources, nutrients, geographical, social, time-period based, diets
	C-4.5	Describes biological changes (growth, hormonal, reproductive) during adolescence, and measures to ensure overall well-being

	C-4.6 Recognizes and discuss substance abuse, viewing school as a safe space to raise these concerns
CG-5 Understands the interface of science, technology, and society	C-5.3 Illustrates how science and technology help improve the quality of lives in every walk of human life (health care, communication, transportation, food security, mitigation of climate change, judicious consumption of resources, applications of artificial satellites, etc.) C-5.4 Shares views on news and articles related to the impact science and technology, and society have on each other.
CG-6 Explores the nature and processes of science through engaging with the evolution of scientific knowledge and conducting scientific inquiry	C-6.5 Illustrates how the scientific knowledge and ideas have changed over time (description of motion of objects and planets, spontaneous generation of life, number of planets), and identifies the scientific values that are inherent and common across the evolution of scientific knowledge (scientific temper, science as a collective endeavor, conserving biodiversity and ecosystems) C-6.6 Formulates questions using scientific terminology (to identify possible causes for an event, patterns, or behavior of objects), and collects data that is usable as evidence (through observation of the natural environment, designing simple experiments or use of simple scientific instruments)
CG-7 Communicates own questions, observations and conclusions related to science	C-7.3 Uses scientific vocabulary to communicate inferences and ideas about science accurately in oral and written form, and through visual representation C-7.4 Designs and build simple models to demonstrate scientific concepts C-7.5 Represents real world events and relationships through diagrams and simple mathematical representations

Secondary Stage

CG-1 Explores the world of matter, its interactions, and properties at the atomic level	**C-1.10** Describes classification of elements in the Periodic Table, and explains how compounds (including carbon compounds) are formed based on atomic structure (Bohr's model) and properties (valency) C-1.11 Investigates the nature and properties of chemical substances (distillation, crystallization, chromatography, types and properties of mixtures, solutions, colloids, and suspensions) C-1.12 Describes and represents chemical interactions and changes using symbols and chemical equations (acid and base, metal, and non-metal, reversible and irreversible)
CG-2 Explores the physical world around us, and understands scientific principles and laws based on observations and analysis	C-2.1 Applies Newton's laws to explain the effect of forces (change in state of motion – displacement and direction, velocity and acceleration, uniform circular motion, acceleration due to gravity), and analyses graphical and mathematical representations of motion in one dimension. C-2.2 Explains the relationship between mass and weight using universal law of gravitation and connect it to laws of motion. C-2.3 Manipulates the position of object and properties of lenses (focus, centre of curvature) to observe image characteristics and correspondence with a ray diagram, and extends this understanding to a combination of lenses (telescope, microscope) C-2.4 Manipulates and analyses different characteristics of the circuit (current, voltage, resistance) and mathematize their relationship (Ohm's law), and applies it to everyday usage (electricity bill, short circuit, and safety measures)

	C-2.5 Defines work in scientific terms, and represents the relationship between potential and kinetic energy (conservation of energy) in mathematical expressions C-2.6 Demonstrates the principle of mechanical advantage by constructing simple machines (system of levers and pulleys) C-2.7 Describes the origin and properties of sound (wavelength, frequency, amplitude), and differences in what we hear as it propagates through different instruments
CG-3 Explores the structure and function of the living world at the cellular level	C-3.11 Explains the role of cellular components (nucleus, mitochondria, endoplasmic reticulum, vacuoles, chloroplast, cell wall), including the semi permeability of cell membrane in making cell the structural basis of living organisms and functional basis of life processes C-3.12 Analyses similarities and differences in the life processes associated with nutrition, reproduction, and transport of materials in organisms (transport of water and photosynthesis in plants; digestion, circulation, breathing and excretion in animals; absorption of nutrients in fungi) C-3.13 Describes cellular mechanisms of heredity (DNA, genes, chromosomes), variation and diversity (changes in sequence of DNA, movement of organisms carrying alleles in the population)
CG-4 Explores interconnectedness between organisms and their environment	C-4.5 Applies the knowledge of diversity at the cellular level and the ecological role organisms play for the classification of living organisms (five-kingdom classification; autotrophic, heterotrophic nutrition; prey, predator, and parasite) C-4.6 Illustrates different levels of organisations of living organisms (from molecules to organisms) C-4.7 Analyses different levels of biological organisation from organisms to ecosystems and biomes, and interactions that take place at each level C-4.8 Analyses patterns of inheritance of traits in terms of Mendel's laws and its consequences at a population level (using models and/or simulations) C-4.9 Analyse evidence demonstrating the consequences of the process of natural selection on biological evolution in terms of changes - structure, and function of organisms
CG-5 Draws linkages between scientific knowledge and knowledge across other curricular areas	C-5.5 Analyses and communicates views on the impact of science and technology on human life through various modes (essay, poster, play, story, presentation, picture book, cartoons, graphic novel) C-5.6 Examines a case study related to the use of science in human life from the perspective of social sciences and ethics (e.g., Marie Curie, Jenner, treatment of patients with mental illness, the story of the atomic bomb, green revolution and GMOs, conservation of biodiversity) C-5.7 Applies scientific principles to explain phenomena in other subjects (sound pitch, octave, and amplitude in music; use of muscles in dance form and sports)
CG-6 Explores knowledge in India and its connection to scientific ideas	C-6.1 Describes indigenous practices related to health and medicinal herbs C-6.2 Describes the empirical evidence used in Indian medical practices (Ayurveda, Unani) and astronomy (Aryabhata's and Varahamihira's contributions to astronomy) C-6.3 Identifies contributions of Indian thought to scientific ideas (atom, sound, material properties, metallurgy, chemical reactions, motion of bodies, estimations at astronomical scales)
CG-7 Explores the nature of science by doing science	C-7.3 Develops accurate and appropriate models (including geometric, mathematical, graphical) to represent of real-life events and phenomena using scientific principles, and use these models to manipulate variables and predict results

	C-7.4 Designs and implements a plan for scientific inquiry (formulates hypotheses, makes predictions, identifies variables, accurately uses scientific instruments, represents data – primary and secondary – in multiple modes, draws inferences based on data and understanding of scientific concepts, theories, laws, and principles, communicates findings using scientific terminology)

E. Social Science Education

Middle Stage

CG-1 Comprehends and interprets sources related to different aspects of human life and makes meaningful interpretations	C-1.13 Collects and interprets multiple sources of information (primary and secondary) to understand the historical, cultural, geographical, and socio-political aspects of human life C-1.14 Represents and analyses data related to various aspects of human life given in the form of text, tables, charts, diagrams, and maps
CG-2 Explores the process of continuity and change in human civilisations through specific examples from their context and a few historical episodes	C-2.8 Explains and analyses major changes in the past and their impact on society C-2.9 Recognises elements of the continued prevalence of certain beliefs, relationships, practices, and activities in human society, notwithstanding major changes in society
CG-3 Draws connections between the causes and effects of different social and historical events or episodes and connects them with the overall impact on human life	C-3.5 Analyses the effect of various changes in early human society from nomadism to settled life and early civilisation (such as, the emergence of agriculture, changes in food habits, basic technologies like construction, transport, pottery, metallurgy), and changes in human habitation, family structures and relationships, the nature of work, people's socio-cultural beliefs and concepts over time (e.g., Ahimsa, and the fallout of major wars or invasions) that significantly impacted human societies C-3.6 Identifies reasons behind harmony and conflict among social groups and communities, in their region and in other parts of the world, and their impact on human societies
CG-4 Understands the functioning of social, cultural, and political institutions and their impact on society, and the way individuals and collectives shape these institutions	C-4.6 Collects, organises, and interprets information about various social, cultural, economic, and political institutions in their vicinity and region, and realises its significance for human society C-4.7 Assesses the influence of social, cultural, and political institutions on an individual or group or community or society in general
CG-5 Understands various forms of inequality and prejudice in society, from	C-5.3 Identifies, explains, and raises questions about different forms of inequality, prejudice, and discrimination prevailing in one's own family, locality, region, and national and global levels C-5.4 Identifies, explains, and appreciates efforts (being) made at different levels through various (including social, cultural, economic, and political)

those prevalent in a family to those at a community or regional or national level and also the initiatives and efforts at various levels to address these issues	mechanisms and institutions, and what individuals can do, to address these to ensure equity, inclusion, and justice
CG-6 Understands the spatial distribution of resources (from local to global), their conservation, the interdependence between natural phenomena and human life, and their environmental and other implications	C-6.2 Explains key natural phenomena, such as, climate, weather, ocean cycles, soil formation, the flow of rivers, and how they are spatially distributed C-6.3 Identifies the distribution of resources, such as, water, agriculture, raw materials, and services across geographies C-6.4 Analyses Indian perspectives on and efforts towards conservation and sustainability in society, and advocates the importance of the same, and what more needs to be done in these directions including in the context of global climate change C-6.5 Correlates the existence of different patterns of livelihoods with different types of landforms, availability of resources, and climatic conditions and changes (in local, regional, national, and global contexts)
CG-7 Appreciates the importance and meaning of being Indian (Bharatiya) by understanding (a) India's rich past and present including its glorious cultural unity in diversity, pluralism, heritage, traditions, literature, art, architecture, philosophy, medicine, science, and other contributions to humanity, and (b) other integrating factors despite the geographical diversity of India	C-7.5 Explains India's unity in diversity by recognising commonalities in its rich and diverse cultural elements, languages, art, philosophical ideas, values, clothing, cuisines, traditions, festivals, trade, commerce, and health practices including Ayurveda and yoga C-7.6 Discovers the topographical diversity of the Indian landmass from the semi-arid zone in the west and the areas of heavy rains in the north-east to the long coastal areas in the south and the snow-clad mountains in the north, as well as, the rich biodiversity of the country C-7.7 Appreciates India's tradition of inclusion across communities and social groups, and its influence in vast parts of the world through its cultural elements
CG-8 Understands and appreciates the process of development of the Constitution of India and upholds its importance to promote democratic values in Indian society	C-8.3 Understands the need for a constitution for any country during the last few centuries, especially in a country, such as, India and its deeper objectives C-8.4 Explains the process of formation of the Indian Constitution and understands the ideas and ideals of the Indian national movement enshrined in it as well as those drawn from India's civilisational heritage C-8.5 Explains the working of the three tiers of local self-government and appreciates its significance in upholding democracy at the grassroot level
CG-9 Understands the processes of economic activities (production and consumption, trade, and commerce)	C-9.3 Explains the key elements of trade and commerce (commodity, production, consumption, and capital) and its impact on individual life and society

CG-10 Understands and appreciates the contributions of India through history and in the present times, to the overall field of Social Science, including the different disciplines that constitute it	C-10.1 Knows and explains the significant contributions of India to all matters (concepts, explanations, methods) studied within the curriculum, in an integrated manner along with the particular matter, illustratively, understands the strengths of India's democratic traditions through its history
CG-11 In the curricular goals CG-1 to CG-10, there is a basic and adequate understanding of the history, geography, and culture of the locality, region, and country	***Note:*** *Competencies for this Curricular Goal have already been incorporated under CG-1 to CG-10*

Secondary Stage

CG-1 Understands and analyses the important phases in Indian history and draws insights to understand present-day India	C-1.8	Explains historical events and processes using different types of sources, with specific examples from Indian history
	C-1.9	Explains and analyses the chronology of human life on the Indian subcontinent, from prehistory to its civilisational beginnings and beyond, and its relations with other civilisations over time, such as, those in Mesopotamia, Greece, Central Asia, China, South-east Asia, Arabia, and Eastern Africa.
	C-1.10	Traces aspects of continuity and change in different phases of history across the Indian subcontinent (including cultural trends, social and religious trends and reforms, and economic and political transformations)
	C-1.11	Explains the growth of new indigenous ideas across India including in Mathematics, Philosophy, Science and Technology, Medicine, Architecture, Agriculture, Literature and Art, and Social Science (such as, zero and the Indian number system, Ahimsa, the six systems of Indian philosophy, Ayurveda, yoga, the 22 Shrutis of Indian music, horticulture, use of herbs and spices, etymology, metres, and grammar) and how they affected the course of Indian and world history
CG-2 Analyses the important phases in world history and draws insights to understand the present-day world	C 2.4	Explains historical events and processes with different types of sources, with specific examples from world history
	C 2.5	Explains and analyses the chronology of human life from its beginnings to nomadism to settled life and other phases of human civilisation
	C 2.6	Traces aspects of continuity and change in different phases of world history (including cultural trends, social and religious reforms, and economic and political transformations)
	C 2.7	Explains the growth of new ideas and practices across the world (including humanism, mercantilism, industrialisation, scientific developments and explorations, imperialism, colonialism, the rise of

		new nation-states across the world, and various technologies including the most current) and how they affected the course of world history
	C 2.8	Recognises the various practices that arose, such as, those in C-2.4, and came to be condemned later on (such as, racism, slavery, colonial invasions, conquests, and plunder, genocides, exclusion of women from democratic and other institutions), all of which have also impacted the course of world history and have left unhealed wounds
CG-3 Understands the idea of a nation and the emergence of the modern Indian Nation	C-3.8	Analyses the meaning of nation and how the concept evolved over time across the world and in the specific context of India, including its roots in the rich civilisational history of the Indian subcontinent
	C-3.9	Identifies and analyses important phases of the Indian national freedom struggle against British colonial rule, with special reference to the movement led by Mahatma Gandhi and other important figures as well as those that led to independence, and understands the specific Indian concepts, values and methods (such as, Swaraj, Swadeshi, passive resistance, fight for Dharma, self-sacrifice, Ahimsa) that played a part in achieving Independence
CG-4 Develops an understanding of the inter-relationship between human beings and their physical environment and how that influences the livelihoods, culture, and the biodiversity of the region	C-4.7	Locates physiographic regions of India and the climatic zones of the world on a globe or map
	C-4.8	Explains important geographical concepts, characteristics of key landforms, their origin, and other physical factors of a region
	C-4.9	Draws inter-linkages between various components of the physical environment, such as, climate and relief, climate and vegetation, vegetation and wildlife
	C-4.10	Analyses and evaluates the inter-relationship between the natural environment and human beings and their cultures across regions and, in the case of India, the special environmental ethos that resulted in practices of nature conservation
	C-4.11	Critically evaluates the impact of human interventions on the environment, including climate change, pollution, shortages of natural resources (particularly water), and loss of biodiversity; identifies practices that have led to these environmental crises and the measures that must be taken to reverse them
	C-4.12	Develops sensitivity towards the judicious use of natural resources (by individuals, societies, and nations) and suggests measures for their conservation
CG-5 Understands the Indian Constitution and explores the essence of Indian democracy and the characteristics of a democratic government	C-5.5	Understands that the Indian Constitution draws from the great cultural heritage and common aspirations of the Indian nation, and recalls India's early experiments with democracy (assemblies in Mahajanapadas, kingdoms and empires at several levels of the society, guilds, Sanghas and Ganas, village councils and committees, Uthiramerur inscriptions)
	C-5.6	Appreciates fundamental Constitutional values and identifies their significance for the prosperity of the Indian nation
	C-5.7	Explains that fundamental rights are the most basic human rights, and they flourish when people also perform their fundamental duties
	C-5.8	Analyses the basic features of a democracy and democratic government and its history in India and across the world and compares this form of government with other forms of government
	C-5.9	Analyses the critical role of non-state and nonmarket participants in the functioning of a democratic government and society, such as, the media, civil society, socio-religious institutions, and community institutions
CG-6	C-6.7	Understands how the Indian ethos and the cultural integration across India did not attempt uniformity, but respected and promoted a rich

Understands and analyses social, cultural, and political life in India over time, as well as, the underlying historical Indian ethos and philosophy of unity in diversity, and recognises challenges faced in these areas in the past and present and the efforts (being) made to address them		diversity in Indian society, and how this harmonisation and unity in diversity, with a historical respect for all cultures, women have counted among India's great strengths by promoting peaceful coexistence
	C-6.8	Understands that, despite C-6.1, forms of inequality, injustice, and discrimination have occurred in different sections of society at different times (due to internal, as well as, outside forces, such as, colonisation), leading to political, social, and cultural efforts, struggles, movements, and mechanisms at various levels towards equity, inclusion, justice, and harmony, with varying outcomes and degrees of success
	C-6.9	Analyses aspects of differential treatment or discrimination that may exist in Indian society, based on, e.g., socio-cultural background, region, language spoken, and what individuals and societies can do to eradicate such differential treatment
	C-6.10	Understands that a progressive society and nation, such as, India is one that recognises not only its civilisational strengths but also its socio-economic, cultural, and political challenges and continuously makes efforts to address those challenges to become ever more prosperous, inclusive, just, and harmonious
CG-7 Develops an understanding of the economy of a nation, with specific reference to India	C-7.6	Defines key features of the economy, such as, production, distribution, demand, supply, trade, and commerce, and factors that influence these aspects (including technology)
	C-7.7	Evaluates the importance of the three sectors of production (primary, secondary, and tertiary) in any country's economy, especially India
	C-7.8	Distinguishes between 'unorganised' and 'organised' sectors of the economy and their role in production for the local market in small, medium, and large-scale production centres (industries), and recognises the special importance of the so-called 'unorganised' sector in Indian economy and its connections with the self-organising features of Indian society
	C-7.9	Traces the beginning and importance of large-scale trade and commerce (including e-commerce) between one country and another, the key items of trade in the beginning, and the changes from time to time
CG-8 Evaluates the economic development of a country in terms of its impact on the lives of its people and nature	C-8.4	Gathers, comprehends, and analyses data related to income, capital, poverty, and employment in one's locality, region and at the national level
	C-8.5	Understands and analyses the concepts and practice of the range of economic systems from free market to entirely state controlled markets
	C-8.6	Understands these features in the context of ancient India, with its thriving trade, both internal and external, and its well-established trade practices and networks, business conventions, and diverse industries, all of which made India one of the world's leading economies up to the colonial period
	C-8.7	Describes India's recent path towards again becoming one of the three largest economies of the world, and how individuals can contribute to this economic progress
	C-8.8	Appreciates the connections between economic development and the environment, and the broader indicators of societal well-being beyond GDP growth and income
CG-9 Understands and appreciates the contribution of India through history and present times, to the overall field of Social	C-9.5	Knows and explains the significant contributions of India to all matters (concepts, explanations, methods) studied within the curriculum, in an integrated manner

Science, and the disciplines that constitute it	

F. Art Education

Preparatory Stage

Learning Standards-1

a. Visual Arts

CG-1 Develops confidence to explore, depict, and celebrate human experience through the arts	C-1.1 Expresses enthusiasm to create a variety of images that depict their everyday life, emotions, and imaginations C-1.2 Discusses a variety of ideas and responses while working collaboratively in the visual arts
CG-2 Exercises their imagination and creativity freely in the arts	C-2.11 Creatively uses different combinations of visual elements (line, form, colour, space, texture) while depicting their everyday observations, personal experiences, and feelings C-2.12 Compares and contrasts the visual elements, themes, and expressions of artworks shared in the classroom
CG-3 Explores basic processes, materials, and techniques in the arts	C-3.14 Makes choices while working with materials, tools, and techniques used in the visual arts C-3.2 Practices steps of planning, executing, and presenting while creating visual artworks individually and collaboratively
CG-4 Explores beauty in their surroundings, and develops an interest in a variety of local art forms and cultural practices	C-4.10 Recognises visual elements in nature and describes their artistic qualities C-4.11 Demonstrates curiosity towards local art forms and culture

b. Theatre

CG-1 Develops confidence to explore, depict, and celebrate human experience through the arts	C-1.1 Expresses enthusiasm to depict a variety of objects, people, situations, and experiences in drama activities C-1.2 Shares ideas and responses while working collaboratively in the dramatic arts.
CG-2 Exercises their imagination and creativity freely in the arts	C-2.1 Creates and performs drama in the classroom based on everyday events, through various combinations of characters, movements, gestures, expressions, postures, and basic props C-2.2 Compares and contrasts elements of drama, themes, and related artistic expressions created in the classroom
CG-3 Explores basic processes, materials, and techniques in the arts	C-3.1 Makes choices while working with materials, tools, and techniques used in the dramatic arts C-3.2 Practices steps of planning, executing, and presenting while creating dramatic artworks individually and collaboratively
CG-4 Explores beauty in their	C-4.12 Recognises elements of drama and movement in nature and describes their artistic qualities

surroundings, and develops an interest in a variety of local art forms and cultural practices	C-4.13 Demonstrates curiosity towards local art forms and culture

c. Music

CG-1 Develops confidence to explore, depict, and celebrate human experience through the arts	C-1.1 Expresses enthusiasm to practice and perform music that is familiar to them. C-1.2 Discusses own thoughts and responses while working collaboratively in music.
CG-2 Exercises their imagination and creativity freely in the arts	C-2.1 Practises and performs songs and rhythms in a variety of musical arrangements (arrangement of vocal, instrumental, solo, duet, ensemble or group). C-2.2 Compares and contrasts musical elements (laya, taala, sur, bhaava), lyrics, and expressions in a variety of musical styles introduced in the classroom
CG-3 Explores basic processes, materials, and techniques in the arts	C-3.1 Makes choices while working with voices, instruments, and arrangements used in music C-3.2 Contributes ideas while selecting music for performance and participates in rehearsals.
CG-4 Explores beauty in their surroundings, and develops an interest in a variety of local art forms and cultural practices	C-4.1 Recognises musical elements in nature and describes their artistic qualities C-4.2 Demonstrates curiosity towards local art forms and culture

d. Dance and Movement

CG-1 Develops confidence to explore, depict, and celebrate human experience through the arts	C-1.1 Expresses enthusiasm to create and perform a variety of dance and movement that is familiar to them C-1.2 Discusses ideas and responses while working collaboratively in dance and movement.
CG-2 Exercises their imagination and creativity freely in the arts	C-2.1 Creates and practices dance, and movement sequences based on everyday actions and personal experiences C-2.2 Compares and contrasts movements, rhythms, postures, themes, and expressions in a variety of dance and movement styles introduced in the classroom
CG-3 Explores basic processes, materials, and techniques in the arts	C-3.1 Makes choices while working with movement steps, instruments, costumes, and arrangements used in dance and movement C-3.2 Contributes ideas while selecting dance and movement sequences for performance and participates in rehearsals
CG-4 Explores beauty in their surroundings, and develops an interest in a variety of local art forms and cultural practices	C-4.1 Recognises elements of dance and movement in nature and describes their artistic qualities C-4.2 Demonstrates curiosity towards local art forms and culture

Learning Standards-2

CG-1 Develops an enjoyment of the arts and exercises their creativity	C-1.1 Creates and presents a variety of artwork to communicate their ideas and emotions in any of the visual and performing art forms

and imagination in visual and performing arts activities	(emphasis on variety in music, painting, drawing, crafts, drama, dance and movement, and local art forms). C-1.2 Describes the varied materials, tools, and processes used in the visual and performing arts and demonstrates familiarity with some of these in their own artwork [e.g., identifies and names some musical instruments and demonstrates simple beats on a dholak, khanjira, bells, utensils, or one's own body (clapping, tapping, making different sounds using mouth and voice)]. C-1.3 Creates artwork collaboratively and shares own thoughts and feelings while responding to arts and culture in their surroundings.

Middle Stage

Learning Standards-2

a. Visual Arts

CG-1 Develops openness to explore and express themselves through various art forms	C-1.1 Expresses confidently their personal and everyday life experiences through various visual art forms C-1.2 Demonstrates flexibility in the process of collaborating and developing visual arts practice
CG-2 Applies their imagination and creativity to explore alternative ideas through the arts	C-2.1 Creates visual artworks based on situations/stories that challenge stereotypes observed in their surroundings (e.g., gender roles) C-2.2 Connects visual imagery, symbols, and visual metaphors with personal experiences, emotions, and imaginations
CG-3 Understands and applies artistic elements, processes, and techniques	C-3.1 Demonstrates care and makes informed choices while using various materials, tools, and techniques in the visual arts C-3.2 Refines ideas and techniques of visual expression from the stage of planning to the final presentation, and reviews the entire process
CG-4 Acquaints themselves with a range of aesthetic sensibilities in regional arts and cultural practices	C-4.1 Demonstrates familiarity with various local and regional forms of art C-4.2 Describes the life and work of a few visual artists in their region and across India

b. Theatre

CG-1 Develops openness to explore and express themselves through various art forms	C-1.1 Expresses confidently their personal and everyday life experiences through various drama activities C-1.2 Demonstrates flexibility in the process of collaborating and developing drama work
CG-2 Applies their imagination and creativity to explore alternative ideas through the arts	C-2.1 Creates and performs drama based on situations/stories that challenge stereotypes observed in their surroundings (e.g., gender roles) C-2.2 Connects elements of drama, themes and symbols with personal experiences, emotions, and imaginations.
CG-3 Understands and applies artistic elements, processes, and techniques	C-3.1 Demonstrates care and basic stage etiquette; and makes informed choices while using various materials, tools and techniques of dramatic arts C- C-3.2 Refines ideas and techniques from the stage of planning to the final presentation in drama for external audiences, and reviews the entire process
CG-4 Acquaints themselves with a	C-4.1 Demonstrates familiarity with various local and regional forms of theatre

range of aesthetic sensibilities in regional arts and cultural practices	C-4.2 Describes the life and work of a few theatre artists and performers in their region and across India

c. Music

CG-1 Develops openness to explore and express themselves through various art forms	C-1.1 Expresses enthusiasm to create and perform a variety of music that is familiar to them C-1.2 Demonstrates flexibility in the process of collaborating and developing practices in music
CG-2 Applies their imagination and creativity to explore alternative ideas through the arts	C-2.1 Creates and performs songs and musical compositions that challenge stereotypes observed in their surroundings (e.g., gender roles) C-2.2 Connects elements of music (lyrics, raagas and rhythms) with personal experiences, emotions and imaginations
CG-3 Understands and applies artistic elements, processes, and techniques	C-3.1 Demonstrates stage etiquette and care for musical instruments and makes informed choices while using resources and techniques in music C-3.2 Refines ideas and methods of musical expression from the stage of planning to the final performance, and reviews the entire processes.
CG-4 Acquaints themselves with a range of aesthetic sensibilities in regional arts and cultural practices	C-4.1 Demonstrates familiarity with various local and regional forms of music. C-4.2 Describes the life and work of a few local musicians and performers in their region and across India

d. Dance and Movement

CG-1 Develops openness to explore and express themselves through various art forms	C-1.1 Expresses confidently their personal and everyday life experiences through a variety of dance and movement activities C-1.2 Demonstrates flexibility in the process of collaborating and developing dance and movement practices
CG-2 Applies their imagination and creativity to explore alternative ideas through the arts	C-2.1 Creates and performs dance and movement sequences that challenge stereotypes observed in their surroundings (e.g., gender roles) C-2.2 Connects elements of dance and movement (mudras, gestures, and postures) with personal experiences, emotions, and imaginations
CG-3 Understands and applies artistic elements, processes, and techniques	C-3.1 Demonstrates stage etiquette and care for stage equipment, props, and costumes, and makes informed choices while using dance and movement techniques C-3.2 Reworks ideas and methods of expression used in dance and movement from the stage of planning to the final performance and reviews the entire process
CG-4 Acquaints themselves with a range of aesthetic sensibilities in regional arts and cultural practices	C-4.1 Demonstrates familiarity with various local and regional forms of dance and movement C-4.2 Describes the life and work of a few local dancers and movement artists in their region and across India

Learning Standards-2

CG-1 Develops knowledge about various art forms of the region or state and develops artistic processes and skills in some of the art forms they are exposed to	C-1.1 Demonstrates basic skills in the arts they are exposed to and creates own variations (e.g., Mandana or alpana or kolam or aipan, narrating stories from the Panchatantra using local forms of puppetry, performing folk songs or dances of their region). C-1.2 Describes the different materials, tools, and techniques used in local art forms in their region and state, and uses them with care while creating their own artwork (e.g., describes the process of natural dyeing used in Kalamkari, and experiments with creating artwork using colours sourced from natural materials around them, such as, plants, vegetables, charcoal, soil, brick). C-1.3 Recognises multiple viewpoints and shares own thoughts and feelings while responding to a variety of arts and cultural practices from their region or state (e.g., watches a traditional folk-dance performance specific to their state and region either live or online, shares their responses and interprets meanings and emotions conveyed by different movements and rhythms).

Secondary Stage

Learning Standards-1

a. Visual Arts

CG-1 Develops an understanding of one's interest and aptitude in the arts	C-1.1 Evaluates own interest in visual art forms by considering its scope of applications (fine arts, crafts, applied arts/ design, arts research and management) C-1.2 Initiates discussions and takes steps to find more information and resources to pursue their interest in the visual arts
CG-2 Extends creative practices and artistic expression in different aspects of their life	C-2.1 Applies the elements and principles of visual arts into their artworks and incorporates these into their routine life C-2.2 Recognises the development of visual expression across a series of works
CG-3 Develops their art practice through the knowledge of a wide range of Indian art forms	C-3.1 Extends explorations and refines techniques in the visual arts through regular practice C-3.2 Incorporates ideas and elements from various genres of Indian visual arts (traditional, popular, contemporary) into their artwork
CG-4 Appreciates the commonality, interconnectedness, and diversity of aesthetic sensibilities across Indian and global art practices and cultures	C-4.1 Analyses commonalities and differences among diverse forms of visual arts, cultures, and aesthetic sensibilities in India and the rest of the world. C-4.2 Evaluates artwork based on creative expression, artistry, and social context.

b. Theatre

CG-1 Develops an understanding of one's interest and aptitude in the arts	C-1.1 Evaluates own interest in dramatic arts by considering its scope of application (acting, direction and design, story/ playwriting, backstage, research and stage management) C-1.2 Initiates discussions and takes steps to find more information and resources for pursuing their interest in dramatic arts
CG-2 Extends creative practices and artistic expression in different aspects of their life	C-2.1 Applies the elements and principles of drama into their process and performances while considering external audiences and incorporates these into their routine life C-2.2 Analyses the development of drama process and performance across a series of work.
CG-3 Develops own art practice through the knowledge of diverse Indian art forms	C-3.1 Extends explorations and refines techniques in drama through regular practice and rehearsals C-3.2 Incorporates ideas and elements from various genres of Indian dramatic arts (traditional, popular, contemporary) into their own drama work
CG-4 Appreciates the diverse aesthetic sensibilities across various Indian art practices and cultures	C-4.1 Analyses commonalities and differences among diverse forms of theatre, cultures, and aesthetic sensibilities in India and the rest of the world. C-4.2 Evaluates drama and theatre performances based on creative expression, artistry, and social context.

c. Music

CG-1 Develops an understanding of one's interest and aptitude in the arts	C-1.1 Evaluates own interest in music by considering its scope of application (performance, composing, production, sound arts and design, recording, music research and management) C-1.2 Initiates discussions and takes steps to find more information and resources to pursue their interest in music
CG-2 Extends creative practices and artistic expression in different aspects of their life	C-2.1 Applies the elements and principles of music into their musical works and incorporates these into their routine life. C-2.2 Analyses the development of musical expression across a series of musical projects.
CG-3 Develops their art practice through the knowledge of a wide range of Indian art forms	C-3.1 Extends explorations and refines techniques in music through regular practice and rehearsals C-3.2 Incorporates ideas and elements from various genres of Indian music (traditional, popular, contemporary) into their own musical work
CG-4 Appreciates the diverse aesthetic sensibilities across various Indian art practices and cultures	C-4.1 Analyses commonalities and differences among diverse forms of Indian music, cultures, and their aesthetic sensibilities C-4.2 Evaluates musical work based on creative expression, artistry and social context

d. Dance and Movement

CG-1 Develops an understanding of one's interest and aptitude in the arts	C-1.1 Evaluates own interest in forms of dance and movement by considering its scope of application (performance, choreography, production, recording, dance and movement research and management)

	C-1.2 Initiates discussions and takes steps to find more information and resources to pursue their interest in dance and movement
CG-2 Extends creative practices and artistic expression in different aspects of their life	C-2.1 Applies the elements and principles of dance and movement into their performance work, and incorporates these into their routine life C-2.2 Analyses the development of expression in dance and movement work across a series of movement projects.
CG-3 Develops own art practice through the knowledge of diverse Indian art forms	C-3.1 Extends explorations and refines techniques in dance and movement through regular practice and rehearsals C-3.2 Incorporates ideas and elements from various genres of Indian dance and movement (traditional, popular, contemporary) into their own artwork.
CG-4 Appreciates the diverse aesthetic sensibilities across various Indian art practices and cultures	C-4.1 Analyses commonalities and differences among diverse forms of Indian dance and movement, cultures, and their aesthetic sensibilities C-4.2 Evaluates dance/movement work based on creative expression, artistry as well as social context

Learning Standards- 2

CG-1 Develops capacities in any one form of visual or performing arts and develops an appreciation for diverse art practices and traditions in India	C-1.1 Demonstrates rigour and regularity in art-making processes, rehearsals, and performance or displays at the school level and inter-school events (e.g., regularly practises drama or music and rehearses specific pieces for performance at an event, allocates a few hours a week to practise vocal or instrumental techniques, and rehearses group song with peers). C-1.2 Imaginatively applies artistic techniques, tools, and materials to express their ideas and feelings while working in the visual or performing arts (e.g., experiments with a variety of threads, needles, and stitch patterns in embroidery; experiments with found materials to create musical instruments). C-1.3 Appreciates diverse forms of artistic expression on the basis of artistic qualities and social context (e.g., appreciates the different forms of classical dance practised in India).

G. Education in Interdisciplinary Areas

CG-1 Explores and engages with the natural and socio-cultural environment in their surroundings.	C-15 Observes and identifies the natural (insects, plants, birds, animals, geographical features, sun and moon, stars, planets, natural resources) and social (houses, relationships) components in their immediate environment. C-16 Describes relationships (including between humans and animals/nature) and traditions (art forms, celebrations, festivals) in the family and community. C-17 Asks questions and makes predictions about simple patterns (season change, food chain, phases of the moon, movement of stars and planets, shapes of trees, plants, leaves, and flowers, rituals, celebrations) observed in the immediate environment.

	C-18	Explains the functioning of local institutions (family, school, bank/post office, market, and Panchayat) in different forms (story, drawing, tabulating data, reports), and analyses their roles.
	C-19	Uses local materials to create simple objects (family tree, envelopes, origami animals) on their own for display or use in classroom processes.
CG-2 Understands the interdependence in their environment through observation and experiences, developing the basis for appreciation of the idea of 'Vasudhaiva Kutumbakam'.	C-2.13	Identifies natural and human-made systems that support their lives (water supply, water cycle, river flow systems, seasons, life cycle of plants and animals, food, household items, transport, communication, electricity in the home).
	C-2.14	Describes the relationship between the natural environment and cultural practices in their immediate environment (nature of work, food, festivals, traditions).
	C-2.15	Connects changes in the environment and the lives of their family and community, as communicated by elders and through local stories (changes in occupation, food habits, resources, celebrations, communication).
CG-3 Explains how to ensure the safety of self and others in different (normal, as well as, emergency) situations.	C-3.15	Describes the basic safety needs and protection (health and hygiene, food, water, shelter, precautions, awareness of emergency situations, abuse, and unsafe situations) of humans, birds, and animals.
	C-3.16	Discusses how to prepare for emergency situations (smoke, fire, small injuries, burns, electrical safety, unseasonal rains, fallen trees) based on discussions with family and community, or personal experiences.
	C-3.17	Develops simple labels and slogans, and participates in roleplay on safety and protection in the local environment to be displayed/done in school and locality
CG-4 Develops sensitivity towards social and natural environment .	C-4.14	Observes and describes diversity among plants, and birds and animals in their immediate environment (shape, sounds, food habits, growth, habitat).
	C-4.15	Observes and describes cultural diversity in their immediate environment (food, clothing, games, different seasons, festivals related to harvest and sowing).
	C-4.16	Describes usage of natural resources in their immediate environment.
	C-4.17	Demonstrates how natural resources can be shared, maintained, and conserved (trees, use of rainwater, benefits of millets).
	C-4.18	Identifies needs of plants, birds, and animals, and how they can be supported (water, soil, food, care).
	C-4.19	Identifies the needs of people in different situations, in terms of access to resources, equal opportunities, work distribution, and shelter.
	C-4.20	Learns about basic social and behavioural norms, values, and dispositions that benefit our social and natural environments and that help our society function smoothly (using dustbins, standing in queues, conserving water, using public transportation, keeping one's environment clean, always helping others in need regardless of background).
CG-5 Develops the ability to read and interpret simple maps.	C-5.8	Explains a line drawing of their school, village, and ward.
	C-5.9	Draws a sketch of their school, village, and ward using symbols and directions.

	C-5.10 Reads simple maps of city, state, and country to identify natural and human-made features (well, lake, post office, school, hospital) with reference to symbols and directions.
CG-6 Uses data and information from various sources to investigate questions related to their immediate environment	C-6.6 Performs simple inquiry related to specific questions independently or in groups. C-6.7 C-6.2 Presents observations and findings through different creative modes (drawing, diagram, poem, play, skit, oral and written expression).
CG-7 Gains foundational familiarity with basic concepts and methods from the natural sciences (life sciences, physical sciences, and earth and space sciences) and engineering.	C-7.8 Gains familiarity with using the scientific method in investigations, as well as, familiarity with other crosscutting concepts, such as, energy, matter, and systems that apply across the domains of science and engineering. C-7.9 C-7.2 Gains familiarity with disciplinary core ideas in the natural sciences, as well as, in engineering, technology, and applications of science, which reflect the content that will be learned across subject areas in later Grades.

H. Physical Education and Well-being

Preparatory Stage

Learning Standards-1

CG-3 Demonstrates the use of basic skills (running, jumping, catching, throwing, hitting, and kicking) to participate in different physical activities/games/sports.	C-3.18 Practises a combination of movement, motor skills, and manipulative skills (catching, throwing, kicking, hitting a ball towards a target while moving, focussing on visual cues to hit the target). C-3.19 Moves purposefully their body to a beat/rhythm/ music. C-3.20 Demonstrates coordination abilities with a partner and objects (e.g., being able to move in coordination with a partner in three-legged race, hand-eye coordination while bowling, throwing). C-3.21 Demonstrates basic warm up exercises and stretching to develop strength and flexibility in the body.
CG-4 Develops an awareness of their personal and social behaviour towards themselves and others	C-4.21 Demonstrates the ability to play games and activities which require and emphasise teamwork, cooperation, personal responsibility, and communication of ideas. C-4.22 Creates group norms and rules of the game/activity before playing and reviews them regularly. C-4.23 Exhibits sensitivity to injuries of others and acts empathetically when the other player is physically injured, emotionally stressed, or feeling unwell. C-4.24 Practises care and responsibility towards physical activity material, playground and facilities. C-4.25 Identifies characteristics of safe/unsafe touch in the context of physical activity and describes ways of reporting them.
CG-5 Demonstrates mental engagement in physical	C-5.11 Explains the concept of some games, their rules, playing positions and basic moves. C-5.12 Expresses their emotions and thinking process during the game.

activity/game situations.	
CG-6 Develops an understanding of the need to develop themselves and self-assess their progress.	C-6.8 Sets simple personal goals/targets and records progress (e.g., throwing a ball at 25 m, then 30 m, then 40 m; Jumping 1, 2, 3 feet high/long).

Learning Standards-2

CG-1 Learns the use of basic skills (running, jumping, catching, throwing, hitting and kicking a ball) to participate in different physical activities/games/ sports.	C-1.15 Practises a combination of movement, motor skills, and manipulative skills (e.g., catching, throwing, kicking, hitting a ball towards a target while moving, focussing on visual cues to hit the target). C-1.16 Demonstrates coordination abilities with a partner and objects (e.g., being able to move in coordination with a partner in three-legged race, hand-eye coordination while bowling, throwing). C-1.17 Demonstrates basic warm up exercises and stretching to develop strength and flexibility in the body
CG-2 Exhibits awareness of personal and social behaviour towards themselves and others.	C-2.10 Demonstrates the ability to play games and activities that require and emphasise teamwork and cooperation. C-2.11 Creates group norms and rules of the game/activity before playing and reviews these regularly. C-2.12 Exhibits sensitivity to injuries of others and acts empathetically when the other player is physically injured, emotionally stressed, or feeling unwell. C-2.13 Practises care and responsibility towards physical activity material, playground and facilities. C-2.14 Identifies characteristics of safe/unsafe touch in the context of physical activity and describes ways of reporting them.
CG-3 Demonstrates mental engagement in physical activity/game situations.	C-3.7 Explains the concepts of some games, their rules, playing positions, and basic moves. C-3.8 C-3.2 Expresses their emotions and thinking process during the game.

Middle Stage

Learning Standards-1

CG-1 Demonstrates intermediate body movements and motor skills to participate in different physical activities/games/sports and develop their understanding.	C-1.12 Develops power, speed, strength, balance, flexibility, judgment, and reflexes in motor movements (running and jumping with various speeds and in various directions, rolling and zig-zag movements, catching a moving object coming with speed or throwing/hitting a ball far with precision). C-1.13 Demonstrates rhythmic movement skills (locomotor, and non-locomotor), such as, smoothly moving, balancing, and transferring weight with intentional changes in direction, speed, tempo and flow C-1.14 Performs two or more fundamental movements at the same time as receiving and passing the ball against a defender. C-1.15 Exhibits manipulation of space and equipment in the context of a game. C-1.16 Recognises correct warm up and cool down exercises to avoid injuries and long-term effects.

	C-1.17	Works on strength, endurance, flexibility, and agility through exercising and training with and without apparatus.
CG-2 Exhibits sensitivity in their personal and social behaviour towards themselves and others.	C 2.9 C 2.10 C 2.11 C 2.12 C 2.13 C 2.14	Reflects on their personal reactions during an interaction and activity with others. Demonstrates supportive behaviour in helping others during emotional setbacks and physical injuries. Creates and teaches the rules of game to others. Creates and applies safety rules and protocols for physical activity. Puts the larger interest of the team first, treats individuals as equals, makes ethical decisions, and takes responsibility for their mistakes. Identifies characteristics of bullying and mental and sexual harassment and describes the protocol to report it to the right person.
CG-3 Demonstrates and practises physical movements, motor skills, social sensitivity, and mental engagement in physical activity and game situations. Demonstrates and practises physical movements, motor skills, social sensitivity, and mental engagement in physical activity and game situations.	C-3.10 C-3.11	Designs multiple strategies for a game and chooses strategies according to the context. C-3.2 Demonstrates calmness and courage in difficult situations.
CG-4 Plans and achieves personal physical fitness goals with little help from teachers.	C-4.13	Identifies physical activity and fitness goals, such as, improving a shot or breaking their own 100 metre record.
CG-5 Learns the connection between physical activity with health, enjoyment, challenge, expression, and social interaction.	C-5.10 C-5.11 C-5.12	Discusses activities that bring personal satisfaction. Identifies different cultures with special reference to dance, physical activity, local games, and spaces to interact. Identifies the relationship between rhythmic movement and their aesthetic value.

Learning Standard-2

CG-1 Demonstrates intermediate body movements and motor skills to participate in different physical activities/games/sports and develop their understanding.	C-20 C-21 C-22	Develops power, speed, strength, balance, flexibility, judgment, and reflexes in motor movements (running and jumping with various speeds and in various directions, rolling and zig-zag movements, catching a moving object coming with speed or throwing, kicking, hitting a ball far with precision). C-1.2 Performs two or more fundamental movements at the same time as receiving and passing the ball against a defender. C-1.3 Recognises correct warm up and cool down exercises to avoid injuries and long-term effects.
CG-2 Exhibits sensitivity in their personal and social behaviour	C-2.16	Reflects on their personal reactions during an interaction/activity with others.

towards themselves and others.	C-2.17 Demonstrates supportive behaviour in helping others during emotional setbacks and physical injuries. C-2.18 Creates and teaches the rules of a game to others. C-2.19 Creates and applies safety rules and protocols for physical activity. C-2.20 Puts the larger interest of the team first, treats individuals as equals, makes ethical decisions, and takes responsibility for their mistakes. C-2.21 Identifies characteristics of bullying and mental and sexual harassment and describes the protocol to report it to the right person.
CG-3 Demonstrates self-awareness and mental engagement in physical activity and game situations	C-3.22 Designs and executes simple strategies for a game. C-3.23 Demonstrates calmness and courage in difficult situations.

Secondary Stage

Learning Standards-1

CG-1 Demonstrates high level of competence in the understanding of movement concepts, strategies, and principles while engaging in and performing physical activities including sports and dance.	C-1.1 Exhibits proficiency in all movement and motor skills required to participate and excel in at least one sport, yoga or any other physical activity (team, dual, individual). C-1.2 Explains role of rhythmic drills to improve their game. C-1.3 Exhibits the ability to use complex movement concepts and principles to develop and refine their game or sports skills. C-1.4 Exhibits and explains manipulation of space and equipment in the context of a game. C-1.5 Applies knowledge and understanding of movements and skills to develop a physical activity plan for themselves, follow a routine and assess independently.
CG-2 Exhibits sensitivity and learn to manipulate their personal and social behaviour towards themselves and others.	C-2.1 Reflects upon their and other's behaviour before, during and after the physical activity in the long term. This may include different but related behaviours, including emotional state of mind, physical fitness, fatigue, fair play, biases, personal interests. C-2.2 C-2.2 Articulates the importance of emotional and mental support to others, as well as, improving performance and encouraging others to perform by analysing the behaviour of student when someone is emotionally or physically hurt, and how their support may improve the others performance. C-2.3 Modifies and creates new games and rules that are more inclusive in nature. C-2.4 Creates and applies safety rules, protocols for physical activity, and visualises how they can be applied outside the field as well. C-2.5 Demonstrates fairness, and responsible behaviour in tough contexts and situations. C-2.6 Exhibits modesty after an exceptional performance, accepts defeat gracefully and enjoys the game.
CG-3 Demonstrates social sensitivity and mental engagement in physical activity and game situations.	C-3.1 Designs and uses multiple strategies in a game and has the ability to make new strategic moves in challenging game situations (e.g., a student's plan A and B both failed and strategises a plan C during the game). C-3.2 Understands and deals with their own and others' emotions and the thinking process during the game.

	C-3.3 Demonstrates calmness and courage in difficult situations and is able to calm their teammates. C-3.4 Regulates the intensity in different situations.
CG-4 Plans personal physical fitness goals independently and monitors them.	C-4.8 Sets multiple physical activity and fitness goals, such as, improving multiple shots or their overall match performance. C-4.9 Assesses their progress in terms of efforts, processes, and outcomes. C-4.10 Prepares, plans, and schedules their own exercises and warmups in consultation with their teacher to get maximum benefits
CG-5 Learns about the value of physical activity for health, enjoyment, challenge, expression, and social interaction.	C-5.5 Illustrates the role of physical education for positive social interaction while discussing physical activity throughout history and culture. C-5.6 Examines the role of physical activity in improving self-confidence and self-esteem. C-5.7 Appreciates the aesthetic appeal of a performance, such as, someone's classy straight drive, a beautiful freekick, effortless smashing of the ball, well-placed drop shot, speedy smash. C-5.8 Expresses self through dance, gymnastics, or any physical activity.
CG-6 Assesses their own growth and development.	C-6.1 Examines the role of different factors which affect growth and development, such as, heredity, immediate environment, diet, diseases, state of mind and physical activity. C-6.2 Analyses the relationship of nutrition, physical activity, and mental health with skeletal health, muscles, strength, endurance, flexibility and agility. C-6.3 Classifies the common injuries of bones and muscles and describes protocol for seeking medical help for themselves and others in that situation, like providing first aid in such situations. C-6.4 Outlines and challenges the societal beliefs and taboos associated with different aspects of growth and development at adolescent age.
CG-7 Learns about tournaments at the international, national, state, district, and block levels.	C-7.10 Charts the various tournaments at international, national, state, district and block levels. C-7.11 Describes the participation criteria and rules of tournaments. C-7.12 Summarises the support or organisational structures to participate in tournaments. C-7.13 Explains the different forms and procedures for participating in tournaments

Learning Standard-2

CG-1 Demonstrates competence in the understanding of movement concepts, strategies and principles while engaging in and performing physical activities, including sports.	C-1.1 Exhibits all movements and motor skills required to participate and play in at least one sport or yoga or any other physical activity (team, dual, individual). C-1.2 Exhibits the ability to use complex movement concepts and principles to develop and refine one's own game and sports skills. C-1.3 Applies knowledge and understanding of movements and skills to develop their own physical activity plan, follows a routine and assesses independently.
CG-2 Exhibits sensitivity and learns to regulate their personal and	C-2.1 Reflects upon their own and others' behaviour before, during, and after the physical activity. This may include different but related

social behaviour towards themselves and others.		behaviours, including emotional state of mind, physical fitness, fatigue, fair play, biases, personal interests.
	C-2.2	Articulates the importance of a team-member's support to improve performance in the game, by analysing the behaviour of students when someone is emotionally or physically hurt, and how their support may improve the performance of the others.
	C-2.3	Modifies and creates new games and rules that are more inclusive in nature.
	C-2.4	Creates and applies safety rules and protocols for physical activity and visualises how they can be applied outside the field as well.
	C-2.5	Demonstrates fairness and responsible behaviour in tough contexts and situations.
	C-2.6	Exhibits modesty after an exceptional performance and accepts defeat gracefully and enjoys the game
CG-3 Demonstrates social sensitivity and mental engagement in physical activity and game situations.	C-3.1	Designs and executes multiple strategies for the game.
	C-3.2	Understands and deals with their own and others' emotions and the thinking process during the game.
	C-3.3	Demonstrates calmness and courage in difficult situations and can calm their teammates.
CG-4 Learns to connect physical activity with health, enjoyment, challenge, expression, and social interaction.	C-4.1	Discusses activities that bring personal satisfaction.
	C-4.2	Identifies diverse cultures with special reference to dance, physical activity, local games and spaces to interact.
CG-5 Learns about tournaments at the international, national, state, district and block levels.	C-5.1	Charts the various tournaments at international, national, state, district and block levels.
	C-5.2	Describes the participation criteria and rules of tournament.
	C-5.3	Summarises the support structure or organisational structure to participate in tournaments.
	C-5.4	CExplains the different forms and procedures for participating in tournaments.

I. Vocational Education

Middle Stage

CG-1 Develops basic skills and allied knowledge of work and associated materials/ procedures	C-1.18	Identifies and uses tools for practice.
	C-1.19	Approaches tasks in a planned and systematic manner.
	C-1.20	Maintains and handles materials/equipment for the required activity.
CG-2 Understands the place and usefulness of vocational skills and vocations in the world of work.	C-2.15	Describes the contribution of vocation in the world of work.
	C-2.16	Applies skills and knowledge learned in the area.
	C-2.17	Evaluates and quantifies the associated products or materials.
CG-3 Develops essential values/ disposition while working	C-3.9	Develops the following values/disposition while engaging in work: • Attention to detail

across areas.		• Persistence and focus • Curiosity and creativity • Empathy and sensitivity • Collaboration and teamwork • Willingness to do physical work
CG-4 Develops basic skills and allied knowledge to run and contribute to the home.	C-4.11	Applies the acquired vocational skills and knowledge in a home setting.

Secondary Stage

CG-1 Develops in-depth basic skills and allied knowledge of work and their associated materials/ procedures.	C-1.18 C-1.19	Performs procedures competently through required tools/equipment. Differentiates between effective and non-effective practices in completing the task.
CG-2 Develops essential values while working in a specific vocation.	C 2.15	Develops the following values while engaging in work: • Attention to detail • Persistence and focus • Curiosity and creativity • Empathy and sensitivity • Collaboration and teamwork • Willingness to do physical work
CG-3 Develops basic skills and allied knowledge to run and contribute to the home.	C-3.12	Applies the acquired vocational skills and knowledge in a home setting

Members of the State Steering Committee

1.	Prof. Nityananda Pradhan, Retd. Principal, RIE, Bhopal	Chairman
2.	Prof. Hrushikesh Senapati, RIE and ex-Director, NCERT	Member
3.	Dr. Gopal Prasad Mohapatra, Retd. Associate professor	Member
4.	Prof. Udaya Nath Dash, Former Prof. Utkal Univ. & Univ. of Delhi	Member
5.	Dr. Kishore Chandra Mohanty, Retd. Educationist	Member
6.	Prof. Sudarshan Mishra, Ravenshaw University	Member
7.	Prof. Ranjana Arora, NIE, NCERT	Member
8.	Prof. Suniti Sanwal, NIE, NCERT	Member
9.	Prof. P.C Agarwal, Principal, RIE, Bhubaneswar NCERT	Member
10.	Dr. Binay Pattanayak, Chief Consultant, NSTC Prog. Office, NCERT	Member
11.	Prof. Gayatri Mohanty, Principal, NDW CTE, Bhubaneswar	Member
12.	Additional Secretary to Government, S& ME Dept.	Member
13.	Dr. Sabita Sahoo, Asst. Director, TE & SCERT	Member
14.	Smt. Gayatri Bahinipati, CDPO, Boriguma	Member
15.	Dr. Mahendra Kumar Mishra, Language and Learning Foundation	Member
16.	Dr. Sruti Mohapatra, CEO, SWABHIMAN	Member
17.	Sri Prasad Tripathy, Secretary, New Life Education Trust	Member
18.	Ms. Monal Jayram, Senior Core Team Member, Piramal Foundation	Member
19.	Director, Directorate of TE &SCERT-	Member Convenor

Core Committee Members (Review and Editing)

1.	Prof. Nityananda Pradhan, Retd. Principal, RIE, Bhopal	Chairman
2.	Prof. Udaya Nath Dash, Former Prof. Utkal Univ. & Univ. of Delhi	Member
3.	Prof. Sudarshan Mishra, Ravenshaw University	Member
4.	Dr. Kishore Chandra Mohanty, Retd. Educationist	Member
5.	Dr. Binay Pattanayak, Chief Consultant, NSTC Prog. Office, NCERT	Member