Guidelines for Design and Implementation of Early Learning Programmes
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Arti Arvind Dhale 9, reads text book during her class at Zilla Parishad Primary School
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Acronyms

ARP    Academic Resource Person
AWC    Anganwadi Centre
AWWW   Anganwadi Worker
BEO    Block Education Officer
BRC    Block Resource Centre
CDPO   Child Development Programme Officer
CRC    Cluster Resource Centre
D.EI.Ed Diploma in Elementary Education
DEO    District Education Officer
DIET   District Institute of Education and Training
DRG    District Resource Group
ECCE   Early Childhood Care and Education
ECE    Early Childhood Education
ELL    Early Language and Literacy
ELP    Early Learning Programmes
EM     Early Mathematics
GP     Gram Panchayat
HL     Home Language
ICDS   Integrated Child Development Services
ID     Instructional Design
IECEI  India Early Childhood Education Impact
LLF    Language and Learning Foundation
MHRD   Ministry of Human Resource Development
MLE    Multi-lingual Education
MOI    Medium of Instruction
MoU    Memorandum of Understanding
MWCD   Ministry of Women and Child Development
NCERT  National Council of Educational Research and Training
NCF    National Curriculum Framework
NCFTE  National Curriculum Framework for Teacher Education
NCTE   National Council for Teacher Education
NGO    Non Government Organization
ORF    Oral Reading Fluency
PBBB   Padhe Bharat Badhe Bharat
PLC    Professional Learning Community
SCERT  State Council of Educational Research and Training
SL     School Language
SMC    School Management Committee
SRG    State Resource Group
SSA    Sarva Shiksha Abhiyan
TLM    Teaching Learning Material
UT     Union Territory
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Chapter 1

Introduction
1.1 Genesis of the Early Learning Programme (ELP) Framework Project

The Ministry of Human Resource Development (MHRD) has promoted strengthening of early learning in pre-primary and early grades in the past few years to build a strong foundation for children for later years of schooling. The *Padhe Bharat Badhe Bharat* guidelines have emphasized the importance of early learning, both early language and literacy, and early mathematics. In 2017, MHRD expressed interest in development of a framework and guidelines for developing programmes for improving early learning outcomes in language and mathematics. UNICEF took up this task to develop an ‘early learning framework/package’ including both early language and literacy, and early mathematics to serve as guidance to states/UTs (henceforth called states) for designing their own early learning enhancement programs. Language and Learning Foundation (LLF), worked on development of the framework and manuals for early learning in collaboration with UNICEF and MHRD.

This project was kicked off by MHRD by inviting leading and credible organizations from within and outside the government to share their approach, experience and strategies for early learning in a workshop held on 7 April 2017. MHRD also requested these organizations to share their materials and facilitate field visits by LLF to understand their programmes.

1.2 Why is Early Learning Crucial?

Nearly 80 per cent of brain development is complete by the age of 8. The pre-school years and early primary classes in school provide the foundation for all future learning. However, education in these years is, often, not given enough importance. Children do not learn the basic skills, abilities and attitudes for reading, writing, numeracy at the end of this foundational stage, as has been seen in the results of the numerous achievement surveys conducted in the country. Also linked to this is the challenge that pre-school education and early primary classes are seen as two distinct stages rather than addressing them as a continuum from the ages of 3 to 8 or 9 years.

The major findings of the recently launched IECEI study 2017 indicates that eight out of ten children at age 4 were enrolled in some programme (government pre-school, private or other pre-school or primary school). While children are enrolled in some kind of a programme, the study also points to the fact that children follow different pathways between ages 5 to 8 years, many 5-year-old were seen enrolled in Class 1 in primary schools and many 6 and 7-year-old continued to be enrolled in pre-school programmes when they should have been in primary school. Thus, there is a huge need for alignment, synergy and convergence between pre-school and primary classes. Pre-school programmes have resulted in improved levels of school readiness, which then impacted the learning levels of children in early primary classes. However, a major concern flagged by the study is around the quality of the pre-schools programmes offered to children. The practices adopted both in the government as well as private pre-schools were found to be developmentally inappropriate-

Early language and literacy, and mathematics skills are the foundation for future learning. *If these are not developed strongly and equitably in the early years (pre-school to Class 3), children are never able to catch up in later grades*. This learning gap continues to widen, the texts in the language textbooks and mathematical concepts become more complex and abstract in later primary grades. Therefore, strengthening teaching-learning of early literacy and mathematics is crucial.
Language, thought and understanding are closely linked. For a young child, a strong foundation of oral language, reading, writing and thinking skills is the basis for all future learning. Mathematics is one of the core components in early learning. The burden of non-comprehension in early mathematics learning can result in fear and phobia which is widely reported about the subject even as early as in Class 3.

1.3 Overview of Current Policies and Programmes Focussing on Learning in Early Years

There have been several steps taken at both policy and programme level by the Ministry of Human Resource Development and Ministry of Women and Child Development (MWCD).

Under the Framework of Implementation for Sarva Shiksha Abhiyan (SSA), MHRD issued detailed guidelines to states to develop stage-wise / class-wise learning improvement programmes with a specific focus on early primary classes. States and UTs were advised to use funds available under the different components of the SSA programme. In August 2016, MHRD launched Padhe Bharat Badhe Bharat (PBBB) a sub-programme within SSA on early reading and writing with comprehension, and early mathematics. This framework provides broad guidelines for early reading and early mathematics programmes.

In the last few years, several states, like Assam (Reading Improvement Programme), Chhattisgarh, Rajasthan, Uttarakhand, Uttar Pradesh, Odisha and West Bengal (Early Grades Reading and Numeracy), have implemented learning improvement programmes targeting children in Classes 1 and 2. Most of these programmes have been around improving early reading/literacy, following varied approaches and methodologies. A few states, such as Punjab and Meghalaya have experimented with implementing programmes to improve learning levels of children in mathematics. Largely these programmes have been implemented by SSA with technical support from non-Governmental organizations.

In early 2017, National Council of Educational Research and Training (NCERT) in consultation with states developed expected learning outcomes for all subjects covering all elementary classes. These learning outcomes have now been also included in the central rules under the Right of Children to Free and Compulsory Education (RTE) Act 2009. NCERT’s Reading Cell (Department of Elementary Education) has developed an early grade reading approach that was tried out in Mathura in Uttar Pradesh. Capacity-building programmes were also organized in a few regions/states.

The National Early Childhood Care and Education (ECCE) Policy of the Ministry of Women and Child Development (MWCD), lays down age-wise sub-stages, with their age appropriate needs and focus. The policy states that, “for children in the age group of 3-6 years attention needs to be on protection from hazards, health care, nutrition, attachment to an adult, developmentally appropriate play-based pre-school education with a structured and planned school readiness component for 5-6 year old.”

The National ECCE policy goes on to state “the mother tongue/home language/local vernacular of the child will be primary language of interaction in ECCE programmes. However, given the young child’s ability at this age to learn many languages, exposure to other languages in the

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1 Learning Outcomes at the Elementary Stage an NCERT Publication http://www.ncert.nic.in/publication/Miscellaneous/pdf_files/tiops101.pdf
region and English, as required, in oral form will be encouraged in a meaningful manner. A multi-lingual strategy will be adopted respecting the children’s language and at the same time using the plasticity of the early years to expose the child to many languages.”

The policy also states that “given that currently a significant number of 5 and 6-year-olds are in primary school in many states, and the RTE Act 2009 has the mandate to provide free and compulsory elementary education from 6-14 years, convergence with the MHRD and state Department of Education will be of key importance, particularly for adoption of child centric and play based approaches and extend the school readiness interventions for children of 5 plus age. Mechanisms will be instituted to facilitate convergence so as to ensure continuity and inter-linkages of centre based ECCE and school age provisions with specific reference to Section 11 of the RTE Act 2010.”

1.4 ELP Framework Objectives

The ELP framework will help states to build an understanding of:

- The various components of an early learning programme
- The approach, principles, strategies, teaching-learning materials for a suitable instructional design
- Professional development programmes for teachers and other stakeholders in the education ecosystem
- Systemic enabling conditions that need to be put in place for implementing ELP successfully
- Some planning and implementation issues.

Recognizing the need and importance for ensuring a continuum of learning from pre-school to Class 3, the scope of this ELP framework has been developed based on one year of pre-school (before primary) and early primary grades (Class 1-3), corresponding to children in the 4+ to 8+ age group.

State governments have started to take steps towards strengthening and improving the pre-school programme (ECE component of ICDS) by developing a developmentally appropriate pre-school education curriculum as well as by providing specific training to the anganwadi workers.

There are also some efforts to develop and strengthen convergence between anganwadi centres and primary schools, like in the states of Bihar, Karnataka, Rajasthan and Telangana. Some states, such as Assam, Chandigarh, Delhi, Haryana, Jammu and Kashmir, Kerala, Meghalaya, Nagaland, Puducherry, Punjab, Sikkim and West Bengal have added a pre-primary class in the primary school itself. This is like a kindergarten or nursery section. Development of the curriculum, teaching-learning and play materials and teacher availability for teaching this pre-primary class is still far from adequate.

1.5 Methodology Adopted for Developing the ELP Framework

The process of developing the ELP framework was initiated during a workshop organized by MHRD on the theme of early learning in April 2017. This workshop was attended by several non-governmental organizations that were already implementing early learning programmes
in partnership with different state governments. These early learning programmes were focussed on language and literacy or mathematics.

The following three criteria were used to select the early learning programmes and organizations for in-depth study of good practices:

- Scale of implementation
- Demonstrated work with state government and MHRD
- Recognized leadership in the domain (early literacy or mathematics).

Organizations that agreed to participate and contribute to the development of the Early Learning Package included the following:

**Early language and literacy** – Early Grade Reading and Numeracy programme of Government of West Bengal and UNICEF West Bengal office; Pratham; Room to Read, CARE India, Organization for Early Literacy Promotion (OELP), and Language and Learning Foundation (LLF).

**Early mathematics** - Early Grade Reading and Numeracy programme of Government of West Bengal and UNICEF West Bengal office; Pratham; Jodo Gyan; Sampark Foundation and Navnirmiti Foundation.

These organizations were requested to share their programme approach, principles, instructional design, teaching-learning materials, teacher professional development programme plans, modules, teacher handbooks, etc.

A desk review of the documents was conducted to understand the strengths of approaches and practices of each organization along the following dimensions: (1) instructional design; (b) teacher professional development and academic support; (c) materials; (d) assessment; (e) community engagement; (f) research and evaluation and (g) working with the government education system.

Following this, field visits were undertaken to observe the implementation of some of the programmes at school level. During field visits, classroom teaching-learning was observed, and interactions were held with stakeholders including teachers, headmasters, cluster and block level academic resource persons, district and state level officials of SSA and representatives of the technical teams of the NGO to get a better understanding of the programme and the challenges.

In addition to understanding the early learning programmes being implemented in the country, the LLF research team also reviewed research reports, policy and programme documents from India and across the world. Early learning strategies and frameworks adopted by different countries were also reviewed.

Other documents referred and reviewed include manuals and reports on early reading and early mathematics developed by NCERT along with the document on learning outcomes.

Training modules on early language and literacy, developed by LLF for the long term course for teachers and teacher educators have been extensively referenced for the Early Language and Literacy sections of this framework document.
This framework and the accompanying manual is not intended to be prescriptive. The documents include principles and strategies based on research and good practices that are appropriate in most contexts in the country. However, each ELP would need to adapt the instructional design for early learning and other dimensions of the programme based on the local context.

1.6 ELP Framework Document Outline

Based on the desk review and field visit the following components were identified as the main pillars for an Early Learning Programme.

- Vision and beliefs of an Early Learning Programme
- Instructional approach including principles, components, strategies, instructional design, teaching learning material for early language and literacy, and early mathematics.
- Assessment of student learning
- Teacher professional development
- Academic support, monitoring and supervision
- Research, evaluation and documentation
- Community engagement
- Planning and management of implementation of early learning programme
- Systemic enabling conditions and action for early learning programmes.

The ELP guidelines focus on key components, essential for designing a comprehensive programme for learning language and literacy, and mathematics, from pre-primary to Class 3. These components have been identified to be critical based on evidence from research and learnings from programmes being implemented by the different organizations in the country.

The essential components are discussed in detail in Chapters 4-12:

a. Instructional Approach to Early Language and Literacy (ELL) and Early Mathematics (EM) – A research-based approach and instructional design that is aligned to the developmental nature of learning of language and literacy, and mathematics is at the core of ELP. In Chapters 4 and 5 the following have been discussed for ELL and EM: (a) approach to teaching-learning; (b) principles of teaching ELL and EM; (c) major components of ELL and EM; (d) developing instructional design from pre-primary to Class 3; and (e) list of essential teaching-learning materials.

b. Student Learning Assessment – Chapter 6 discusses the need and importance of school-based learning assessments and also sharing some ideas for formative and summative assessments.

c. Teachers’ Professional Development – The teacher as an active agent has a pivotal role in the classroom to bring the new instructional design into practice and ensure its sustainability. Teachers’ professional development needs to be continuous, of high quality and can be implemented using a variety of strategies. In Chapter 7, the principles, strategies and planning for professional development for early learning has been described.

d. Community Engagement: Schools need to build a strong partnership with parents and community members, as they can support the school and children to improve learning and
promote chances of success and sustainability of the programme. In Chapter 8 we discuss the different principles and strategies for community engagement and also provide examples to illustrate some existing practices.

e. Academic Support, Monitoring, and Supervision: For successful implementation of an early learning programme, teachers need support and encouragement from others in the system, as they adopt new teaching practices. Changes in practice will come about only with regular follow-up and academic support. Academic support teams (cluster, block and district levels) can support teachers in a variety of ways: during school visits, reflection and peer exchange about classroom practices in meetings, analyses of children’s progress in learning, provision of additional resources after training, etc. They can also collect feedback from teachers and observe classroom teaching and suggest adjustments in the programme strategy. This is discussed in Chapter 9.

f. Research, Evaluation and Documentation: For any quality programme, research must be an integral part of it right from the planning stage. Research studies during implementation can inform evidence-based decision making for continuous improvement or changes to be made to the programme design. Frequent documentation, observations and evidence from practise of the programme can help make the programme a dynamic and living programme. In Chapter 10 we discuss the principles and practices related to research and documentation that help in further revising and improving the programme.

g. Planning and Management: Effective planning and quality implementation (being as close to the design planned) is key to achieving the outcomes desired under ELP. In Chapter 11 different activities and actions that need to be taken before implementation begins have been detailed out. In the Appendix of the document a suggestive Programme Framework or log frame along with a planning and management tool has been shared.

h. Systemic Enabling Conditions: Successful implementation and sustainability of ELP depends on a system-wide shared vision and commitment towards improving learning of all children. In Chapter 12 the major policy and programming related issues that need attention in order to develop and implement effective early learning programmes are presented.
| Introduction                                      | • Current context and policies for early learning  
|                                                  | • Need for an Early Learning Programme Framework  |
| Challenges & Opportunities for Early Learning   | • Factors of poor learning among children (home and community related, school and classroom related and systemic issues)  |
| Early Learning Programme – Aim, Vision & Principles | • Importance of Early Learning & Programme Vision  
|                                                  | • Core concept of EL, guiding principles and beliefs for early learning  |
| Instructional Approach to Early Language & Literacy | • Balanced approach to ELL and its guiding principles  
|                                                  | • Components of ELL and developing instructional design, including focus on children with different home language and teaching learning material for ELL  |
| Instructional Approach to Early Mathematics      | • Approach and principles of teaching EM  
|                                                  | • Components of EM and developing instructional design; recommended teaching learning material for EM  |
| Assessment for Learning                          | • Purpose of students’ learning assessments and need to focus on school-based assessments  
|                                                  | • Major recommendations for assessments in an early learning programme  |
| Teachers’ Professional Development               | • Focus on continuous inservice professional development  
|                                                  | • Other professional development strategies  |
| Community Engagement                              | • Need, importance and strategies for community engagement  
|                                                  | • Major recommendations for an early learning programme  |
| Academic Support, Monitoring & Supervision       | • Role and capacity building of academic support team members  |
| Research, Evaluation & Documentation             | • Need for evaluation  
|                                                  | • Planning evaluation of ELP and documentation of programme practices  |
| Planning & Management of Implementation of ELP    | • Understanding the preparatory activities required for implementation of ELP  |
| Systemic Enabling Conditions & Action for ELP    | • Policy and programme related areas that need to be addressed to provide an enabling environment for an ELP  |
| Appendix                                         | • Programme framework for monitoring implementation of ELP  
|                                                  | • Planning tool for year-wise activities  |
Chapter 2

Major Challenges for Early Learning
We have seen in Chapter 1 that children’s learning levels in early primary classes are low and varied. Most classrooms have a multilevel learning situation with some children not acquiring even basic literacy and numeracy skills.

2.1 Factors related to low levels of learning

There are multiple factors that result in low learning outcomes of children in early primary classes. These factors are related to systemic issues, teaching practices adopted in the classroom, teachers’ beliefs and attitudes, home and community.

2.1.1 Home and community context

Children enrolled in government schools belong mostly to low-literacy homes and deprived socio-economic backgrounds. They have limited exposure to different types of printed materials at home, like books, newspapers, magazines, pamphlets, etc. For a significant number of children, the language they are most familiar with is not the language used and taught at school. Lack of quality pre-school programmes further adds to the disadvantage of children in terms of their preparedness for formal school education. The teaching-learning process in pre-school and early primary classes does not take into account the children’s home and community contexts, e.g. limited or no exposure to literacy practices at home, limited understanding of the standard version of language used at school, etc.

2.1.2 Classroom teaching-learning process

Overall, the teaching-learning process is teacher-centred where the teacher engages in a ‘performance’ and children remain mostly passive, participating in repetitive tasks and activities, like choral repetition, copying and handwriting practice and rote memorization. Some characteristics of the process as seen in various researches and documented are as follows:
• There are children of different ages and varied learning levels in each class.
• Children are not expected to, or encouraged to, talk and discuss in the classroom. In majority classrooms, teachers talk most of the time while children either give choral responses or are passive spectators.

• Activities, like choral repetition, copying from blackboard, are repeatedly done in a mechanical way and do not result in learning. Children soon get disinterested or distracted and their ‘time-on-task’ is low. Most children are not actively engaged for most of the teaching time.

• There is no sense of enjoyment or fun in the learning process.

• Teaching in the classroom is textbook centred and the emphasis is on completing the curriculum.

• The teaching-learning is disconnected from the children’s context and real-world experiences

• Teachers are either unable to or are unwilling to provide additional support to children who are lagging behind and the gap continues to widen.

• Student learning assessment, including examinations, is largely focussed on content rather than on testing for skills or concept development. Teaching does not include continuous assessment. The focus of these assessments, where implemented, is on documentation and record keeping of children’s assessment results rather than follow-up action to improve learning.

• Children join school with informal mathematical thinking as they solve simple problems in real life. However, mathematics learning in the classroom is not connected with the child’s outside school experiences.

• There are very few children’s reading materials or TLM in most classrooms. Often, there are alphabet and number charts displayed in the classroom or painted on the classroom walls. Thus, children do not get any chance to engage with books or other learning materials.

Teacher reads text word-by-word or sentence-by-sentence; students repeat after teacher.

Figure 2 A typical language class (textbook lesson)
2.1.3 Teacher’s beliefs and assumptions

Beliefs and assumptions of teachers about children, their abilities, their languages and cultures and about teaching-learning inform their practice in class. These beliefs and attitudes do not get addressed during pre-service training. Further, these are reinforced by colleagues and others in the system. In-service training programmes focus largely on subject content and do not provide space for discussion on opinions, beliefs and assumptions. Research studies have identified the following beliefs and attitudes that are not appropriate:

- Children from very deprived and low-literacy backgrounds will not be able to learn everything taught in class and have low expectations of such children.
- Some teachers’ beliefs specific to learning of language and literacy skills include the following:
  - Children come to school with oral language capabilities, and therefore, teaching should focus on learning to read and write only.
  - Children cannot start reading before they have learnt all the varnas and aksharas. Therefore, there is no point providing storybooks until children have learnt decoding fully.
  - Children already know the meaning of words, once they learn to decode they will automatically understand the meaning of the text.
  - Reading and writing should be taught sequentially.
  - Children’s home languages are seen as a problem. Many home languages are considered inferior to the standard language.
- In case of mathematics learning, most teachers believe that once they have demonstrated a procedure followed by repeated practice by children, it will result in mastery in the particular concept.

2.1.4 System-related factors

System related issues that contribute to low and varied learning outcomes in primary classes are as follows:

- While the RTE Act 2009 states that formal school education should start at age 6 years, there are more than 20 states where the entry age for Class 1 is 5-years. Starting formal
education at a younger age brings its own challenges as the developmental expectations from children are unrealistic.

- Provisioning of pre-school education is not universalized. In addition, the quality of the pre-school education is a matter of concern. Research studies have shown that the anganwadi worker is overburdened with multiple responsibilities hence she is unable to provide adequate attention to early childhood education. In private schools the curriculum is often a downward extension of the Class 1 curriculum (teaching and writing of letters and numbers) which is developmentally inappropriate. Some states have provided for one or two-year pre-primary classes in primary schools, but these classes do not have dedicated teachers.

- The instructional time for language teaching is low; often just one period of 35 to 40 minutes a day. This is grossly inadequate.

- In case of language textbooks, the content is often at a level higher than what children can read. Lessons could be long with difficult vocabulary and limited illustrations. In case of mathematics, the concepts are often presented in a condensed manner, lacking a logical progression resulting in gaps. Illustrations are often not good.

- The expectation from teachers is to complete the teaching of all lessons in the textbook.

- Teaching of language and literacy and mathematics require additional teaching resources, like word cards, picture cards, story books, work books, maths kits including beads, puzzles, 2 D and 3 D shapes, etc. These are required in multiple sets and need to be replenished periodically. SSA or state’s own budgets do not provide for adequate TLM and storybooks for each class. Sometimes, procurement procedures come in the way of buying the most appropriate materials required for a programme.
• In the past decade, many states have launched new programmes every one or two years without consistently following one approach or strategy for an extended period. These programmes are usually prescriptive packages that are changed frequently. States need to develop a comprehensive road map for improving learning in early primary grades over five to six years.

• Learning in early school years is a specialized area; capacities to design and manage early programmes are not available in State Council of Education Research and Training (SCERT), District Institute of Education Training (DIET), Block Resource Centre (BRC), Cluster Resource Centre (CRC). States may need to partner with NGOs that can provide technical inputs or invest heavily in building capacities of persons in these institutions.

• Currently, there is minimal focus on foundational learning (pre-school and early grades of primary classes) in teacher development programmes both in pre-service and in-service programmes.

• Textbooks, workbooks, teaching-learning materials, student learning assessments that are designed centrally are based on certain assumptions, such as children when they join school have familiarity with the language taught at school; children have developed emergent literacy and mathematics skills. These assumptions are often not appropriate.

• A major challenge that has adversely affected implementation of learning improvement programmes in states has been the steady decline in availability of funds for designing and implementing such programmes.
Chapter 3

Early Learning Programme: Vision, Aim and Principles
3.1 Importance of Early Learning

There is a strong national concern today regarding the poor learning levels of children at various stages of school education. Research has shown conclusively that children who are unable to develop basic foundations of language and literacy and mathematics by the end of Class 3 are at a serious disadvantage; their academic performance continues to remain poor in later years due to which they are unable to cope with expectations at school. Low performance at school also results in children suffering from low self-esteem and thus are at the greatest risk of dropping out of school without completing their education. Developing a strong foundation of language and literacy skills in the early years (3+ to 8+) is critical to all future learning. Language is the medium for understanding, thinking, problem solving, reasoning, inferring and communicating. There is enough evidence to show that if basic foundational skills of language and literacy are not developed early, this can lead to poor learning of other subjects at school. Appropriately designed and well implemented early learning programmes, focussed on developing and improving language, literacy and mathematics outcomes, can lead to stronger academic performance in later grades.

Therefore, it is crucial to focus on improving the quality of education and learning outcomes in the foundational stages of pre-school and early primary grades.

Research across the globe has provided substantial evidence of the positive impact of preschool education on learning levels of children in the early primary grades. This has also been the finding in the recently concluded longitudinal research in India (IECEI, 2017) which found that participation in quality pre-school education led to higher levels of school readiness in children, which in turn led to better learning levels in language and mathematics in primary grades. Therefore, an early learning programme should begin with two years of pre-school education or at least one year of pre-primary education (kindergarten class) included in the primary school, up to Class 3.

For children who have no previous pre-school experience, developing foundational skills in language, literacy and mathematics, must be included in the first 2-3 months of Class 1, in the form of a condensed school readiness curriculum.

**Quality pre-school education is crucial for school readiness and strong early learning in primary school**

Neuroscience research has shown that in the first five-to-seven years after birth, there are critical periods during which certain neural connections are formed, which are critical for cognitive and language competencies. These competencies provide a sound foundation for children to be successful with formal instruction at school. Quality pre-school programmes can provide an environment in which children get exposure to rich language experiences and activities that promote their understanding of mathematics.

There is now substantial evidence to show how emergent literacy and pre-mathematical skills and concepts can develop almost from infancy through exposure to stimulating
In order to conceptualize a foundational learning programme, that follows a continuum of a developmentally appropriate curriculum for children from the age of 3 to 8 years, different models can be operationalized in our community.

• Co-location of anganwadi centres within the primary school premises ensuring continuity and transition from one to the other. Convergence to ensure curriculum both at pre-school and in early classes to be continuous and flexible so that children achieve foundational learning. Recently a joint letter2 from the Department of School Education and Literacy, MHRD and MWCD has been issued to states to examine the possibility of co-locating anganwadi centres to ensure transition to school as well as preparedness of children for going to school.

• Some states or within states, schools under municipal corporations, offer pre-school education of 1 or 2 years’ duration. The data indicates that the current provisioning of pre-school or pre-primary sections within schools is limited to a few states and cover a small percentage of schools. This model of pre-primary schooling could be implemented in states that are still enrolling children at the age of 5 years in Class 1, which is contrary to the provisions of the RTE Act 2009 that mandates children of age 6 to be enrolled in Class 1. Such an intervention would also benefit the under-age children enrolled in Class 1.

• While states develop suitable policies and programmes for ensuring that all children in the age group of 3-8 years benefit from quality programme both at pre-school and in early classes, a school readiness curriculum needs to be designed in the interim, for children enrolled in Class 1. This could be a curriculum for the first 2-3 months so that children who have not had any previous experience of pre-school are able to develop some of the foundational skills before the formal teaching of language and mathematics is initiated.

environments. Such an environment which facilitates development of oral language, emergent literacy and foundational mathematics concepts and skills can best be provided in the pre-school years because by Class 1 the curriculum gets too focused on formal literacy (reading and writing) and abstract mathematical representation. Even a one-year pre-primary class (KG) can provide a good foundation to the early school years.

Being ready for formal learning in school (school readiness), requires children to develop along other dimensions (apart from language and literacy development and cognitive pre-mathematical skills), viz. sensory and perceptual development; physical health and motor development; personal, social and emotional development (self-concept and control, initiative and curiosity in learning, increased attention span, behaviours of cooperation and compassion, group interactions, expressing feelings); development of creative and aesthetic expression (expression, enjoyment and dispositions for music and dance, creativity and inventiveness with materials). The appropriate time for these dimensions of child development is from age 3 to 6 years, in pre-school.

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2 http://wcd.nic.in/sites/default/files/Co-location%20of%20AWCs%20in%20School%20Premises.pdf
3.2 Vision for an Early Learning Programme (ELP)

Learning outcomes and all-round development: The vision for an early learning programme should be based on following beliefs. All children, when supported appropriately, can develop strong foundational skills for language, literacy and mathematics by the end of Class 3 (beginning with at least one year of pre-primary education) and become confident learners with high self-esteem. Given the diversity in age, language, socio-economic backgrounds, pre-school experiences and individual differences with which children come to school, the expectation should be that most children will achieve expected grade-level outcomes by the end of Class 3, while their pace of learning and developmental trajectories would be different. The focus of a holistic ELP should be on all-round development of the child - children in pre-school and early primary years should be happy, confident, thinking and learning.

Teaching-learning process and supportive learning environment: The vision cannot be only about learning outcomes. We know that outcomes result from developmentally appropriate instructional practices and the learning experiences of children (including the learning environment) in the classroom. Therefore, a clear vision of the transformed nature of classroom processes should be an integral part of the design of the early learning programme. The vision for teaching-learning in an early grade classroom would include, at least, the following measurable dimensions: (a) children actively engaged in the learning process—thinking, talking, listening attentively, engaged in free play-based activities, other appropriate learning activities, doing things, reading, writing, etc. (b) all children get equitable opportunities for participation in learning activities. The ELP design should have flexible strategies for addressing the multilevel learning situation in most classrooms and ensure that those children that need, receive extra attention and support during regular class time (c) positive and supportive relationships that provide a safe and secure environment for learning, promote socio-emotional development in the early years, and help young children adjust to the new social and academic environment, develop children’s motivation and belief in their abilities. Such an enabling environment for learning is even more crucial for children coming from deprived backgrounds (d) appropriate strategies for use of children’s home languages in the classroom and support for acquisition/learning of the school languages.

The focus would shift from merely formal presentation of content by the teacher, choral repetition by children, rote memorization of textbook content or algorithms and passive tasks like copying to more interactive classroom processes that includes group work, understanding of concepts, thinking and active participation in learning activities. The ELP design should identify appropriate, observable and measurable indicators for these dimensions of change in the teaching-learning process.

We will discuss the major dimensions and principles of early learning in Section 3.5.

3.3 Core Concept of Early Learning

Let us try to understand what early language and literacy and early mathematics is and what should be the main aims of early language and literacy and early mathematics teaching.

As has been stated earlier in Section 3.1, early learning is a continuum from the age of 3-years to 8-years, covering pre-school years and early primary classes in school. This period of growth and development is continuous and cumulative, so that what precedes influences what follows. The programme interventions for early learning must address the different domains
of development of the child, rather than only focussing on formal learning of the alphabet and numbers. Research has shown that a developmentally appropriate curriculum during these early years in the life of the child helps in developing strong foundations for learning in future.

The National ECCE Curriculum Framework 2013 mentions that the pre-school curriculum must address the following interrelated domains of holistic development through an integrated and play-based approach:

- **Sensory and Perceptual Development**: Development of the five senses through visual, auditory, and kinaesthetic experiences.
- **Physical, Health and Motor Development**: Gross motor skills, coordination of fine muscles with dexterity; eye-hand coordination; sense of balance, physical coordination, and awareness of space and direction; nutrition, health status and practices.
- **Language Development**: Listening and comprehension; oral skills / speaking and communicating; vocabulary development; pre-literacy / emergent literacy skills, like phonological awareness; print awareness and concepts; letter sound correspondence; recognition of letters; building words, and sentences and early writing and introduction to language of school transaction.
- **Cognitive Development**: Development of various concepts, including pre-number and number concepts and operations, (knowledge and skills related to comparing, classification, seriation, conservation of space and quantity, one-to-one correspondence, counting); spatial sense, patterns and estimations in measurement; data handling; skills related to sequential thinking, critical thinking, observing, reasoning and problem solving; and knowledge of concepts related to the physical, social and natural environment.
- **Development of Creative and Aesthetic Appreciation**: Exploring different art forms, developing dispositions, expression and appreciation for artistic, dance / drama and musical activities.
- **Personal, Social and Emotional Development**: Development of self-concept; self-control; life skills / self-help skills; habit formation; initiative and curiosity; engagement and persistence; cooperation; compassion; social relationships; group interaction; pro-social behaviour; expressing feelings, accepting others’ feelings.

In the school readiness phase of pre-school, targeting children in the age group of 5-6 years, through a structured and planned curriculum for developing emergent literacy and cognitive skills required for learning of mathematics while developmentally appropriate play-based activities for the overall development of the child continue to be implemented.

This preparedness of children for learning language and literacy and mathematics includes the following:

- **Emergent reading**: Developing familiarity with print material, developing vocabulary, phonological awareness and ability to handle books.
- **Emergent writing**: Involves fine motor development, understanding directionality, drawing and scribbling and finding meaning in writing.
- **Number readiness**: Pre-number concept, categorization, classification, sequential thinking, seriation, problem solving and reasoning (shapes, colour).

### 3.3.1 Early Language and Literacy

Language is more than just listening, speaking, reading and writing. Language serves the purpose of communication, thinking and making sense of the world through the processes of inferring and reasoning. In fact, strong early language and literacy skills are the basis of all learning in the formal school setting.
Learning to read with complete understanding and write independently can be the most crucial element of ensuring equitable quality since these are basic skills that open the window for future learning. If a school cannot teach all children to read and write well in the early primary classes, there is definitely a crisis in that school/classroom.

*Language is not everything in education, but without language, everything is nothing in education (Wolff, 2006)*

*When children learn language, they are not simply engaging in one type of learning among many; rather, they are learning the foundations of learning itself.*

*Reading is a complex and active process* of constructing meaning from a text. The process of reading is not however, confined to passive comprehension of the text, but involves an active engagement or connect with the text where the child is constantly responding to what is being read. It requires the interplay of many skills and abilities that can be divided into the two dimensions of (a) word recognition and (b) language comprehension. Learning to read is a developmental process. Developing a desire and positive attitude to reading should be an important component of an early language classroom.

*Aim of early language and literacy education:* The basic purpose of early language and literacy teaching is to enable all children to read fluently with deep comprehension and ability to respond to what is read, and to be able to express themselves with clarity, both orally and through independent writing. In addition, children should develop an interest and habit of reading. Children should also develop bilingual or multilingual capabilities, both oral and literacy. “Language and literacy teaching, therefore, goes beyond development of reading and writing skills and should aim to enable students to use language and literacy skills and practices for a wide variety of purposes to participate meaningfully and in an empowered manner in society.” (Early Language and Literacy in India, A Position Paper: CARE India, June 2016).

ELL teaching-learning should be able to appropriately address the language learning needs of children whose home language is different from the medium of instruction at school.

*Oral language development in home language; appropriate exposure to the school language including good listening comprehension skills, development of print and phonological awareness and development of emergent reading and writing skills in the pre-school years are crucial for language and literacy development in early primary school years.*
### Components of Early Language and Literacy

**Emergent literacy includes emergent reading and writing skills**
Developing awareness about print, and pretend reading, i.e. reading words as pictures; drawing and scribbling to represent something and expressing.

**Oral language**
Improved listening comprehension; oral vocabulary and extended conversation skills.

**Phonological awareness**
Building an understanding of the sound structure of language.

**Decoding**
Deciphering written words, by sounding them out based on understanding the relationship between symbols and their corresponding sounds.

**Vocabulary development**
Developing knowledge of words and word meanings.

**Reading with comprehension**
Constructing meaning from a written text and critically thinking about it.

**Fluent reading**
Accurate, automatic recognition of words and reading with expression.

**Writing**
Ability to encode sounds to write words correctly, along with presentation of thoughts or information in a logical and organized manner. Learning to write is a developmental process, starting with children scribbling and drawing in the pre-school years.

**Developing the habit of reading**
Engagement with a wide variety of books and other reading materials. Dedicated time for this in school and at home.

### 3.3.2 Early Mathematics

Mathematics is more than arithmetic and mechanical manipulations of numbers. Mathematics serves as a significant tool to comprehend and organize the world around us by building understanding of various components, like numbers, number operations, measurement and space. It helps in developing mathematical thinking which enables learners to solve various problems effectively and efficiently, reason logically, think abstractly or generalize, and communicate and argue using precise language and sign system of mathematics.

**Early mathematics** facilitates the development of mathematical thinking by encouraging children to visualize, reason and argue logically, think abstractly, develop understanding of various components and use various mathematical strategies and tools to solve problems in an effective manner. It empowers young learners with important mathematical skills like comparing and seriation, sorting and classifying objects, quantifying, estimating and measuring, identifying patterns, organizing data to draw conclusions and inferences, etc.

**Aim of early mathematics:** The early mathematics classroom aims at
- Learning with understanding around various components of mathematics, like numbers and number relations, number operations, measurement, shapes and spatial thinking, patterns and data handling,
• Making learning of mathematics an enjoyable, purposeful and meaningful activity.
• Facilitating the development of multiple strategies, visualization and problem-solving abilities among all the young learners.
• Enabling learners to talk and communicate using mathematically-appropriate language, think logically and justify their reasoning.
• Providing rich and developmentally appropriate mathematical opportunities to all young learners to become engaged and confident mathematical learners.

Components of Early Mathematics:

**Numbers:** Developing number concept and number relationships

**Number operation:** Meaningfully learn the concept of basic number operations to solve various everyday problems

**Measurement:** Estimating, comparing or quantifying objects on the basis of continuous quantities like length, weight, and capacity.

**Shapes and spatial understanding:** Exploring space and locating objects in the given space. Sorting, identifying, sorting objects around specific properties or features.

**Patterns:** Exploring, making and predicting patterns

**Data handling:** Collecting and recording the data; organizing and displaying the data and interpreting or making sense of the data

Mathematics is considered a ‘difficult’ subject. Children start developing a linking or disliking for mathematics as early as by Class 3. Given the hierarchical nature of various concepts in learning of mathematics, it is important to ensure a strong foundation where all students learn mathematics in a meaningful and enjoyable manner. The instructional approach/tasks should encourage learners to think, talk, explore, pose questions to become engaged mathematical learners.

### 3.4 Guiding Principles for an Early Learning Programme

**i. Focus on learning milestones and learning outcomes**

The ECCE Policy 2013, of the Government of India lays emphasis on the need for having early learning standards for young children (up to the age of 6 years), covering all domains of development. Early learning and development standards have been developed based on a scientific process and will be available in the public domain. The NCERT has developed learning outcomes for all classes, covering all subjects in the elementary stage of school education. These learning outcomes have been mandated as standards of learning by including them in the Central Rules of the RTE Act 2009. Most states have adopted them. These standards and outcomes are reference for providing guidance for preparation of curriculum, teaching strategies and assessment tools.
ii. Flexibility and continuity of curriculum and learning from pre-school to Class 3

Development of the curriculum and approach for early language and literacy and early mathematics should be a continuum from pre-school (age 3) to Class 3 (age 8+). There needs to be linkages and a progression for different components of language and mathematics learning over the early years.

As some studies have shown (IECEI, 2017), children who enrol in Class 1 are of different ages and with very varied pre-school experiences. In several states, children of age 5 are enrolled in Class 1. This implies that the starting points and progression of learning outcomes in early primary classes cannot follow a fixed path. There should be flexibility in the curriculum. Children should be expected to achieve learning outcomes by the end of Class 3.

iii. Early learning for ALL: Focus on equity

All children are capable of learning. It is the responsibility of school and teachers to ensure quality and inclusive teaching processes that address issues of equity. There is enough research evidence to show that if children do not get supported during the foundational stage of learning, then the learning gap only widens in later classes.

Teachers must develop an understanding about the children in their classrooms, their home backgrounds, the language they speak and understand and the experiences, knowledge and skills they bring with them when they join school. Using classroom-based assessments, teachers must identify children who need additional support; and work with them on a regular and continuous basis. An early language or mathematics classroom should examine that all children acquire basic literacy and mathematics skills including thinking and reasoning.

iv. Recognizing and catering to diversity

Children in a classroom are from different home environments, social backgrounds, levels of home literacy and print availability, speaking different home languages, are of varying age, with or without pre-school experience. This diversity has an influence on the early schooling experiences of children and can result in significant differences in children’s levels of learning. Often this is seen as an obstacle to teaching. While such classrooms can be challenging, it is for the teacher to acknowledge and respect these differences and ensure that children’s backgrounds and experiences including languages and cultures find place in the early years of learning.

v. Early learning should include higher order skills like thinking and reasoning along with basic skills

An effective early learning classroom is one where the teaching of basic skills is balanced with development of higher order skills and abilities related to comprehension, logical thinking, reasoning, and ability to present thoughts, views and opinions both orally and through independent writing.

_The notion that these higher order skills and abilities can be developed later, i.e. after basic skills have been developed in classes 1 and 2 is incorrect. These should be included in the regular curriculum right from pre-school and continued to be integrated in to early learning._
programmes. In order to develop higher order abilities and skills, teaching-learning must include a variety of learning experiences in which children are expected to think deeply, express themselves, explore, infer, discuss, apply, communicate and argue logically and make decisions.

vi. Children should be actively engaged

Learning takes place only when children are actively engaged in the learning process. Actively engaged children are active listeners, asking questions, responding to statements, sharing their experiences, working in pairs or groups, thinking, reading, writing, manipulating and working with learning materials and making purposeful effort to complete the task with enthusiasm. This requires a transformative change in the teaching-learning process in early primary classrooms where the dominant processes at present are teacher-talk, children listening passively, engaged in choral repetition, memorization and copying. The change will not come easily or quickly. The vision for this change in classroom process should guide the design of early learning programmes and professional development of teachers and all other stakeholders.

Active engagement is like the clutch mechanism of a car engaging the motor; the clutch connects the engine’s power to the drive shaft and wheels, and this sets the car in motion. If the clutch does not engage properly, all that results is useless revving of the motor; the car does not move. Unless learners engage with the demonstrations and activities and materials, such processes will not result in learning. (Cambourne, B. 1999 *Conditions of Learning*)

Many children, especially from deprived, low-literacy backgrounds do not engage with the teaching of literacy or engage in a superficial manner, because they don’t expect to be able to read or write effectively. This in turn is because the language and discourse in their classroom conveys the constant message that learning to read or write is too difficult, complex, or irrelevant for learners like them.

vii. Including children’s language in the classroom

Language is the medium for communication expression, thinking, understanding and problem solving. It is a strong aspect of a child’s social and cultural identity. Children’s languages and dialects, often different from the formal language used in school, should be valued as an affirmation of their identities and prior knowledge and experience. Including children’s languages in the classroom helps to promote an equitable learning environment and provides a strong scaffold for learning the school language. More importantly, giving space to their languages (and supporting its development) in K to Class 3 classrooms can help ensure that higher order work like thinking, reasoning and expression will happen through their first language(s) even when children are still learning the school language. Of course, there should be a clearly defined strategy for using children’s first languages and the approach for strong learning of the additional school languages (the medium of instruction and English).

Most often, children’s languages could be non-dominant languages that have a lower prestige and status. They are not considered ‘good enough’ for use in the formal space of the classroom. A shift to using children’s languages (by the teacher and children) will require a shift in beliefs about these non-dominant languages and understanding of how their use helps children.
viii. Availability and use of teaching-learning materials and children’s literature

A variety of learning resources and play material is needed in the classroom. These include instructional materials, like big books, conversation charts, posters of poems, letter cards and akshara grids, dice, word cards, simple decodable texts and reading cards for language and number cards, ganitmala, blocks, dominoes, calendar, beads, puzzles and board games, etc. for mathematics. These materials should be available in adequate quantity so that these can be used by children. Most importantly, early primary classrooms should have simple, illustrated and graded storybooks for children to read at different stages of their reading development.

Teachers should also have sufficient stationery, including paper, pencils, colours, etc. for children to use for writing and drawing. These materials should be easily accessible for children to use. In addition, toys for pretend or role play, like, dolls, masks, puppets, that are helpful for young children.

ix. Teachers as active agents of change

Teachers have a central role in bringing about any change in the teaching-learning process. For becoming active agents of change, they need to feel committed to the vision and direction of change as well as the strategies being suggested. Teachers should not be treated as mere ‘technicians’ directed to implement the scripted activities for a new early learning programme designed at some centralized level. To bring about this commitment for change, the following will be needed:

• High quality continuous professional development activities that are focussed on classroom issues
• Consultation and dialogue with teachers about the need for change, reflection about the experience of implementing the new strategies, acting on their feedback and providing regular academic support.
• Encouraging teachers who are early adopters of the new strategies.
• Creating a supportive environment for change within the system.

3.5 Principles of Teaching-Learning of ELP

i. Teaching and learning should follow a sequence from known to unknown, concrete to abstract and simple to complex

Learning of various concepts which may appear simple to an adult is new and complex for a young learner. To help children learn and master concepts and skills, teaching-learning should be organized from known to the unknown. Children bring with them experiences, knowledge and skills, and this prior knowledge should be used for helping children learn new concepts. Children’s prior knowledge should be linked with any new learning in the classroom. For instance, children may know counting but may not understand the concept or value of a number. Children come with strong foundation of oral skills in the language they speak at home, while they may have very little understanding of the language of instruction at school. In both cases, teaching should begin from what children already know. In mathematics, the number concept can be taught using concrete objects. For learning the school language, children first get to communicate in the language they are
most comfortable with, while gradually transitioning to the language of the school, using the scaffold of their first language. It is also important to use contexts that are familiar to children (in stories, texts and content of other subjects) to help better comprehension.

When teaching young children anything new, it is important to **start with concrete and gradually move towards abstract**. Concrete objectives are those that children are able to see and manipulate with their hands. For example, to develop new vocabulary, children should be shown objects or pictures of objects to pick up new words. In mathematics, when children are learning number operations, like addition and subtraction, these concepts are best introduced using concrete objects and with real life examples.

In the early years of learning (and even later), children should be introduced to **simple concepts first**, and as they progress they can start **to engage with complex ideas**. In mathematics children are able to organize a set of objects in a certain order, such as from smallest to largest. This is an important skill as later they may be required to order numbers in a set as part of a math problem in later years. As children are learning to read, storybooks selected for them should have short and simple sentences, simple plots with few characters and large illustrations. As they progress they are able to read and understand storybooks with complex plots, multiple characters and fewer illustrations.

ii. **Learning for young children is a social activity**

Learning happens through interactive processes between teacher and children and among children working in small groups and in pairs, which gives children opportunities to learn from each other, work together in achieving a desired goal, share responsibility, get deeply involved with a task and support each other in learning. Group work activities like reading together, communicating and explaining one’s ideas or thinking of answers must be part of everyday classroom activity. Group work must be planned carefully depending on the teaching-learning objectives. Groups could be of children with mixed learning levels or same learning levels (when differentiated instruction is planned).

iii. **Play and fun is intrinsic to learning in early education**

Through play, children develop language skills, social-emotional skills, creativity, and cognitive skills. For most children their play is natural and spontaneous. Teachers in preschool and early primary classes must ensure time, space and resources for **structured or planned play**, which is an important process of learning. Providing high quality planned experiences for structured play is an important way to support children’s learning that is both enjoyable and challenging. Language development happens in the social context, therefore, when children are playing together, they are practising their language skills and developing them further. For example, in a pre-school classroom, setting up a doctor’s clinic or a grocery shop where children can pretend play will help children’s imagination, help develop new vocabulary and also mathematical concepts. Play-based activities and the element of fun should continue in early primary classes. Many language and mathematics games can be played with or without materials. In addition, role-play, puzzles, riddles can be used for many concepts and skills.
iv. Teaching at the ‘right level’: Targeting learning activities in the Zone of Proximal Development:

Learning experiences of children should be within their Zone of Proximal Development (ZPD). This is the zone of learning between what a child can do without any help and what a child cannot do even with support. In this zone, the child can learn with guidance from a teacher or others.

Teaching in the classroom, should be directed to this zone of learning. The implication of this is that the teacher should be aware of the learning levels of individual children or groups of children in her classroom; the activities planned to be conducted must not be too easy (the child can complete the activities independently and not learn anything new) or too difficult (even with help from a more-skilled person) the activity is too hard.

v. Scaffolding learning and Gradual Release of Responsibility (GRR)

Scaffolding is the process of providing guidance and support to children in different ways to help them learn a new concept or skill in the ZPD. For instance, while scaffolding, to help children read a slightly difficult text, the teacher can start by discussing the illustrations, connecting it to their prior knowledge and pointing out the key vocabulary in the text. While reading-aloud the text to children, to first chunk the text into smaller sections and then read-aloud to children and discuss the text as it is read. Use of children’s home language to help them understand a text in the school language is another example of scaffolding.

An important strategy that helps scaffold learning is the Gradual Release of Responsibility model. In this the teacher gradually shifts the responsibility of learning to the child while supporting in the process. This model of gradual release of responsibility adopts the following steps:

For young children, the initial step of demonstration or modelling by the teacher is an important starting step for learning any new skill or knowledge, as

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3 Zone of Proximal development often abbreviated as ZPD, is the difference between what a learner can do without help and what he or she cannot do. The concept was introduced, but not fully developed, by psychologist Lev Vygotsky (1896–1934).
vi. Child talk important for learning in class

Talk is an important tool for learning for young children in early years at school. At present, talk in the classroom is dominated by the teacher, with children being passive listeners or engaged in choral repetition. Most of the learning in the initial years takes place through talking about and talking through a topic, especially extended talk that can scaffold learning. Children need many opportunities to talk—with each other, with adults, one-on-one, and in a group. Such opportunities can be built into specific time dedicated for children’s talk. Children’s talk can be encouraged by listening to them attentively and patiently, asking open-ended questions (Why do you think this happened?), planning for structured discussions and providing a fear-free environment in the classroom.

“Reading and writing float on a sea of talk” Edward Sapir, an American linguist and anthropologist, said about the huge potential, but limited opportunities for children-talk, especially extended and exploratory talk, ‘It is somewhat as though a dynamo capable of generating enough power to run an elevator were operated almost exclusively to operate an electric doorbell’.

vii. Recognizing that errors are a part of the learning process

Failing in a task or making mistakes or errors during the process of learning is inevitable. The classroom culture needs to support risk-taking among children; teachers need to consider these mistakes /errors as important indicators of children’s thinking process. The errors made by children should be used as stepping stones for further learning. A supportive, fear-free and learning focussed environment is essential.

viii. Learning and assessment of learning go hand in hand

Continuous assessment is integral to teaching-learning and not an ‘add on’ activity. Such formative assessments are made on an ongoing basis to understand what children are learning and what are the gaps. This can be done through observing children, listening to them, reviewing work done by children in their notebooks, practice worksheets, their response to questions, etc. Appropriately designed periodic assessments are also useful for tracking children’s progress against specific milestones followed by implementing specific support as needed.

Assessments must be followed up with corrective action by the teacher. It is not enough to gather evidence of children’s learning progress or difficulties; teachers need to take corrective measures including providing additional support to children who are struggling, revisit teaching strategies and use of learning material, etc.

ix. Revision or spiralling of concepts deepens learning

Regular revision and reinforcement of concepts and skills must be part of the instructional plan. This revision can be included in the daily and weekly plan at the beginning of a school term or after a periodic assessment that shows children’s learning difficulties. This helps children in consolidating their understanding and is another form of scaffolding that supports children’s learning.
Chapter 4

Instructional Approach to Early Language and Literacy
4.1 Importance of Early Learning

i. Balanced Approach to teaching of early language and literacy

At present, early primary language classrooms are focussed mainly on teaching *varnamala* and *matras*, choral repetition of a text being read by the teacher or other students and copying or handwriting practice. There is little emphasis on meaning-oriented work. In the early years, teaching of language and literacy should be a balance of both ‘lower-order’ skills-oriented work (phonological awareness, decoding, writing letters and words correctly) and higher-order, meaning-based (oral language development including listening comprehension, conversation, reading, engaging with books, drawing and original writing) work. It is important that teaching of decoding is explicit and systematic.

Another dimension of balanced ELL teaching is that oral language development, decoding related work, reading and writing activities should happen on a daily basis. While children are learning decoding, they continue to engage (and pretend read) with books, listen to and respond to interactive reading-aloud of storybooks and write/draw in response to the text being read to them. Also, teaching of *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.

Specifically, for teaching of reading, a balanced approach involves the following dimensions:
1. Teaching of lower order skills like phonological and print awareness and decoding
2. Developing skills and strategies for comprehension and responding to a text
3. Developing reading fluency through regular opportunities and practice of reading (a) simple, levelled texts with controlled vocabulary (reading cards and storybooks)
developed specifically to support children’s reading at different levels and (b) a variety of children’s good literature, especially storybooks

4. Developing a desire and love for reading

ii. Adopting the four-block approach for implementing instruction

The language teaching time of 90-120 minutes a day needs to include on an almost daily basis activities related to the four major components of oral language, word recognition, reading and writing. This is often referred to as the Four-Block Approach (Figure 6). While activities for the four blocks maybe implemented in an integrated manner, it is important that children spend time working on each of the blocks on a regular basis.

In Class 2 and 3, children who do not acquire the basic word recognition skills would need additional support for which time would have to be allocated. A differentiated approach for addressing needs of such children should be a part of the activities in all the four blocks.

![Figure -6]

4.2 Key Guiding Principles for an Early Language and Literacy Programme

These principles should be read along with the principles of early learning discussed in Section 3.5.

i. Language and literacy development in pre-school and early primary classes should include development of thinking and reasoning skills:

Development of higher-order skills, like making inference from the text, abstracting main idea, summarizing and retelling a story, applying to a different situation and expressing an opinion about what is read, organizing and presenting thoughts logically in writing, etc. should be an important component of teaching of literacy for oral language, reading and writing.

![Figure -7]
ii. Theme based approach at pre-primary stage

The National ECCE Curriculum 2014, recommends an integrated approach to teaching and learning in the pre-school. Such an integrated approach is supported by brain research and how human beings learn, including research done by Piaget (1969), Vygotsky (1962), and Bruner (1960). Activities, like morning circle time, storytelling, phonological awareness and writing can be designed based on themes that are related to everyday lives of children, such as my family and friends, festivals, neighbours and community, animals and birds, seasons, etc. A storybook or a rhyme could be used as a core material for the theme. This requires considerable planning.

iii. Supporting children whose home language is different

Many children join pre-school and primary school with a very limited understanding of the school language used as the medium of instruction. At the pre-primary level, the medium of instruction should be the children’s home language, while they can be exposed to other languages in the oral form. In early primary classes, children’s home languages should find place in the classroom to ensure meaningful participation of children. This requires a change in attitudes of teachers and others in the education system towards children’s home languages and cultures. Appropriate strategies need to be used to help children acquire an understanding of the school language over time beginning with oral comprehension.

Thus, the school system (curriculum, teacher education, teaching-learning process) needs to adapt itself to the backgrounds and contexts of children. It is inappropriate to brand these children and their families or contexts as ‘deficient’ and incapable of learning.

iv. Supporting children with low-literacy and poor-print home environment

A significant number of children join pre-school or Class 1 with little or no exposure to print at home owing to a lack of a reading and writing culture at home. They need to be initiated in to an understanding of print through a print-rich environment at school. Engagement with illustrated storybooks helps them develop an understanding that print carries meaning and it can be used to express oneself and communicate with others. Children need to understand how literacy is useful for them before they are taught the varnamala. Early language and literacy education should help children transition from a dominant oral culture to a print culture.

v. Meaningful use of language in contexts familiar to children

Children face several challenges when learning to read and write. These include (a) familiarizing themselves with the form of print and the use of written language (b) breaking the ‘code’ of the script to be able to recognize words (c) understanding an unfamiliar language (d) use of unfamiliar and abstract contexts in school texts (e) presentational nature of school discourse, which is focussed on formal teaching of lessons.

Children’s burden of language and literacy learning would be greatly reduced by using contexts and themes that are familiar to children and by promoting a communicative and
vi. Focus on meaning-making from the beginning

A very common belief amongst teachers is that children should first learn to decode and once they can read words they can easily understand what they read. This belief in the sequentiality of teaching of decoding and meaning-making is very harmful. *Meaning-making should be the focus of language teaching from the pre-primary stage.* The focus on meaning-making can be achieved initially by developing strong listening comprehension skills and vocabulary development through oral language activities of storytelling, interactive read-aloud from simple storybooks and conversation. Oral comprehension skills transfer easily to reading comprehension with the development of strong word recognition skills. *Therefore, comprehension, including higher-order skills of inference, analysis, application and expressing opinion should be emphasized and practised along with teaching of decoding.*

vii. Availability of children’s literature in the classroom

Children need to engage with a wide variety of reading materials in the classroom beyond the textbook, for developing their reading skills and helping them develop the habit of reading. Simple, interesting and illustrated storybooks may be used for reading aloud by the teacher; shared reading and independent reading activities could be a part of the instructional design of the language class and for independent free reading by children. Opportunities to engage with a wide variety of children’s literature will help develop a desire and a positive attitude to words reading and this should be an important objective of early language classrooms.

4.3 Principles and Strategies for Supporting Children Whose Home Language is Different from the School Language

Given the diverse language situations in Indian classrooms, the approach to teaching of early language and literacy will need to be guided by (a) a set of principles about how children learn language and (b) strategies appropriate for different language situations. The bottom line for any such strategy is the recognition and use of children’s home languages in the classroom either as the medium of instruction or to promote oral expression and higher-order comprehension work, and/or as a scaffold to learn the school languages.

4.3.1 Importance of using children’s home languages (HL/L1)

Ideally, children should receive primary education in their home/first language. It is best to develop literacy skills in a familiar language, as this ensures that children understand what is being taught; it supports development of their thinking, higher-order comprehension and expression in the early primary classes and reinforces their culture, language and prior experience. There is very strong evidence from several countries and languages that children who study through the medium of their first language for the initial years of education have higher levels of achievement in all subjects (including math and science) than children who studied through a language that was not familiar to them or transitioned to an unfamiliar language after only a few years of studying through their first language. Teaching in children’s HL should continue for at least 6 to 8 years. An early-exit model where the medium of institution (MOI) is changed from the children’s HL to the school language (SL) within 2 to 3 years does not help children learn either language well. Children
do not acquire the necessary academic language skills which are necessary for learning all other subjects.

### 4.3.2 Some principles for learning an unfamiliar language

a. Language learning happens best when the language is used in a meaningful and purposeful context that children can relate to and feel connected with. For an early language classroom, this implies use of children’s contexts and experiences, familiar stories and conversation themes that are close to children’s hearts. Presently, in most classrooms, teachers present textbook lessons in a presentational manner thereby limiting the scope for conversation.
b. Using a familiar language (L1) as a scaffold in a planned manner helps in learning of an unfamiliar language.
c. Extensive oral language work in the classroom including reading aloud to children is very important to help them develop an understanding of the school language.
d. Children will find it easier to acquire an unfamiliar language or improve oral expressions when the main purpose of language use is for communication to others instead of focussing on purity and correctness of language used. When children are learning the language, they would naturally use a ‘mixed language’ and make errors in the use of the unfamiliar language. This should not be discouraged, but rather considered as a natural part of the learning process.
e. Learning an unfamiliar language requires many opportunities of listening to the language (and reading it) in a form that is within the children’s sphere of comprehension. The implication for an early classroom is that the language used by the teacher should be simple and supported by gestures, pictures, actions and use of words from the children’s home languages. Use of language in meaningful and familiar contexts also supports comprehension and acquisition of an unfamiliar language.
f. For learning an unfamiliar language, it is important to develop a minimum vocabulary of commonly-used words of that language at an early stage. This helps in building comprehension of oral and written language.
g. Language learning requires a stress-free environment, the way children learn their first language at home. The implication is that in the classroom there should not be pressure on early production or speaking and formal assessment.
h. It is not enough for children to develop basic conversational skills in the school language. Learning all subjects through a language requires core academic skills that are developed only after 5-7 years of formal instruction in school. When children have to learn through an unfamiliar language, they could develop basic conversational fluency in 2-3 years, but do not develop the academic language and skills necessary to understand the academic content of the textbooks. This leads to non-comprehension in learning other subjects.

### 4.3.3 Relationship between languages and implication for learning additional languages

a. Languages develop in an interrelated manner. Development of one language supports the development of other languages. Therefore, using L1 in the classroom does not harm, but supports development of school languages.
b. Learning the first language well helps a child learn the other languages better and more quickly as many of the underlying skills of language do not have to be learnt a second or third time. The transfer of skills and concepts happens between all languages that a person knows and uses.
c. Using a familiar language (L1) as a scaffold in a planned manner greatly helps in learning of an unfamiliar language.
4.3.4 Complex language situations

Multilingualism is a way of life in our country. A vast majority of people speak two or more languages. Different languages are used in different domains of life, in formal office communication, in the market, at home, with elders, etc. Children 4-5-years-age, in many situations, may not be multilingual, but be proficient in one language, which may be quite different from the formal language used in school texts.

Language situations in a classroom are quite varied (see box); the important factors that define the extent of disadvantage children could face when the home and school languages are different include:

A very simplified typology of classroom language situations in early primary classes

Type I
Almost all students have a functional understanding of the SL

Type II A
Most students have a limited or no understanding of the SL at entry in Class 1 and almost all students have the same HL and the teacher understands/speaks the children’s language

Type II B
Most students have a limited or no understanding of the school language at entry in grade 1 and almost all students have the same HL and the teacher does not understand/speak the children’s HL

Type III
Some/most students have a limited understanding of the school language and students belong to two or more HL groups. The teacher understands/speaks one of the children’s HLs

Children need time to gradually become proficient in the school language. But, in our school system, children do not get any time to develop a good understanding of the school language. They have to start reading and writing in the school language almost from the first day in school and also learn other subjects through the school language as medium of instruction.

a. Children’s language profile:
   • Home language and other language(s) that they know at 4-6-years of age.
   • How similar or different is their HL compared to the SL?
   • What has been their exposure to and understanding of SL when they join pre-primary or Class 1?
   • The classroom has children of two or more home or first languages; children may also have some understanding of a local link language or lingua franca when they join school
b. Teacher’s attitude towards children’s HL and ability to understand/speak children’s HL
c. Language used for instruction could vary from the teacher maintaining a strictly SL only environment to a situation where the teacher translates all content to the children’s HL with very little use of SL
d. Language teaching methods and school texts: Common methods of teacher-talk domination, choral repetition by children, varnamala-based literacy learning, rote memorization and copying are ineffective for language learning. In pre-school itself, children may be forced to start learning two scripts including English. School textbooks may have difficult vocabulary and language that could make it more difficult for children.

4.3.5 Approaches for language learning in different language contexts

Overall, language teaching should follow the principles outlined above and the ones to follow in the next section.

Three broad approaches could be followed for supporting children when their HLs are different from the SL. Since language situations are very varied along the dimensions identified above, strategies will need to be flexible, adapted by teachers who have a good conceptual understanding of early language and literacy principles including second language acquisition.

a. Home language as medium of instruction (for 5-8 years) approach; other languages added one by one and taught as subjects:

**Appropriate context for this approach:**
- All children have the same HL;
- The HL is very different from the SL (Gondi and Hindi);
- Children have no or very little understanding of the SL when they join pre-school or primary school and there are no/few opportunities of hearing the SL in the environment outside school;
- Teachers are proficient in the HL.

**Approach:**

Here the HL is used as MOI from the pre-school stage. Initial literacy is acquired in the HL. Exposure to additional languages, including English in the oral form could begin early, but literacy in other languages is delayed and introduced sequentially (first HL, then the regional/state language like Hindi and then, by Class 3 English). HL would continue to be the MOI for 5-6 years. When the MOI shifts to the state language, children’s HL continues to be taught as a subject. There is, usually, a stage of 1-2-years when both HL and the state language could be used as MOI for a few subjects. In India, HL as MOI programmes were implemented in Odisha and Andhra Pradesh by the state governments and SSA for several years. The Odisha programme continues to be implemented in more than ten home languages. However, these are early-exit programmes where the shift is made very early, by Class 4, when the MOI shifts completely to the state language for all subjects.

This approach is very intensive and requires a comprehensive programme that includes curriculum and textbook development in the HL, availability of teachers from that language background, community mobilization for support of using HL, teacher education and regular academic support. The programme will not succeed if any of these dimensions are not implemented well.

b. Teaching through SL but using appropriate strategies for teaching-learning of an unfamiliar language including use of children’s HL as scaffold. Children’s HL used as a resource and encouraged:
**Appropriate contexts:**
- HL and SL belong to the same language group and are somewhat or very similar;
- Children have a limited understanding of SL at 4-5 years of age;
- Teachers know the children’s HL;
- There is no support for using the HL as MOI in school.

These are common language contexts in our country.

**Approach:**

The focus here is on children learning the SL well. Here HL and SL are used together for oral language development. HL is very useful for higher order listening comprehension and expression work and also as a scaffold for learning of SL. Use of HL and SL has to be adjusted by the teacher depending on the nature of work being done in the classroom and the extent of understanding of SL at any point. School texts that demand academic language skills are postponed until children develop basic fluency in SL. The main strategies for second language learning include, opportunities for listening to meaningful use of SL in a known context; appropriate conversation in HL and SL with graded use of SL; vocabulary development and scaffolding of HL during reading and writing. Use of mixed language (HL-SL) is promoted as a part of the language learning process.

c. **Using multiple home languages as a resource in the classroom**

**Appropriate contexts:**
- Classrooms with children speaking two or more home languages;
- The HLs could be similar or quite different from the SL and many children have a limited understanding of SL when they join school;
- Teachers may know one or more of the HLs.

**Approach:**

Children's languages are used as a resource in the classroom. Some strategies that are useful in such contexts are: translation between different HLs and SL; use of mixed languages for classroom activities and use of texts and storybooks in different languages. This approach has not been implemented at scale in our country. It requires teachers to be very respectful of linguistic and cultural diversity and be highly skilled in supporting children to use multiple languages. This may not be effective with young children of 4-7 years of age who may not be able to think about language and compare different language vocabulary and sentence structures. When there are children with several (say 3 or more) HLs, it is difficult to give adequate space to all languages and also help children make good progress in learning SL.

**4.4 Components of a Balanced Early Language and Literacy Instruction**

As defined earlier, early language and literacy teaching-learning includes the following major dimensions:
- Oral language development
- Reading
- Writing
- Thinking and reasoning abilities are included in each of these dimensions.
Research has shown that learning of language and literacy requires a comprehensive and systematic approach focussed on children acquiring skills related to two broad categories:

- **Word recognition and accuracy in writing words (lower-order skills):** These include print awareness and phonological awareness (considered as foundational skills before teaching of decoding), decoding, writing letters and words correctly.

- **Language comprehension and expression (higher-order skills for oral work, reading and writing):** This includes oral language development, vocabulary development, reading with comprehension and active response to reading, and original writing or composition.

Following are some of the components of early language and literacy development. The instructional design of an ELL programme needs to ensure development of all these components/skills. Many of these components are not taught separately, but as a part of integrated language and literacy activities.

### 4.4.1 Emergent literacy

Children acquire the foundations of reading and writing and engage in literacy activities much before they are able to decode and write conventionally (using letters and words). This stage is called ‘emergent literacy’. Development of emergent literacy is an important stage in the process of learning to read and write and these experiences have proven to improve learning levels in the later grades in school (IECEI, 2017). Emergent literacy includes both emergent reading and writing.

**Emergent reading** skills include: awareness about print and pretend reading, including practices like ‘look and say’, i.e. reading words as pictures.

**Emergent writing** skills include: drawing and scribbling to represent something and express themselves in a form of writing.

Children acquire emergent reading and writing skills through exposure to print at home and outside, e.g., recognizing labels, listening to storybooks being read to them and pretending to read them, seeing people write, drawing or scribbling, etc. Most children from low-literacy households do not get exposure to print and may join pre-school or school with little awareness of print. Developing emergent literacy skills should be the focus of quality pre-school programmes. If children have not attended pre-school, the early months in Class 1 should support children in developing emergent literacy skills through activities for print awareness, engaging with storybooks and pretending to read, modelling writing of spoken words, drawing and scribbling, etc. before beginning to teach decoding.

### 4.4.2 Oral language development

Oral language development (OLD) is much more than just the skill of listening and speaking. **Oral language development is the foundation for learning to read and write.** In fact, oral language—listening comprehension, conversation and extended talk forms the basis for most of the learning in early primary classes. This is often a neglected area of work in a language classroom as the focus is mostly on teaching children to read and write.

**a. Oral language development includes the following:**

- **Listening and responding:** listening carefully with comprehension and ability to give simple responses.
• **Oral vocabulary development.**
• **Retelling and expressing:** Ability to talk about or retell a story, event or experience in own words, with appropriate sentence structure and logical organizing of thoughts.
• **Using talk and conversation for learning:** Young children think primarily through talk. By encouraging children to talk, teachers can support higher-order thinking processes.

Oral language helps in developing vocabulary, background knowledge, listening comprehension including thinking and reasoning, understanding and developing formal standard language, and language structures (awareness about grammar and syntax) and provides scope for weaving local culture and traditions, stories and songs in the teaching-learning process.

The nature of oral language work in the classroom changes as children progress from one class to the other. Oral language work, including discussion related to written texts, should continue throughout primary classes.

**b. Oral language development during pre-school or pre-primary class**

The focus of oral language work should be development of the child’s first language or Home Language (HL) also referred to as L1 in the document, while providing exposure to the School Language (SL) also referred to as L2 in the document. Children who develop strong oral language skills during the pre-school years develop a strong foundation for their later achievements in reading, especially reading comprehension. Activities like story-telling, rhymes and songs, free and guided conversations help children develop phonological awareness, vocabulary development, listening comprehension skills along with developing their attention span.

**c. Oral language development for children who are not familiar with the school language**

Oral language development over an extended period of time is even more crucial for children whose home or first language is different from the language used in school as the medium of instruction. At the pre-school stage, almost all oral work should be in the children’s HL while providing some exposure to the SL. At this age, children can acquire an additional language easily through appropriate opportunities for listening to meaningful and comprehensible input.

HL should continue to be used and developed in the early primary classes while helping children acquire strong oral and literacy skills in the SL. Oral language activities have to include both children’s HLs and SL. The approach and strategies for different classroom language situations has been discussed in Section 4.3.

**4.4.3 Print awareness**

Print awareness includes knowledge of the following:
• Printed words are symbols for words in spoken language, which helps in seeing the interconnectedness between oral and written language;
• Functions and forms of print, e.g., in a storybook, in notices and advertisements, posters, for writing letters and communicating thoughts to others;
• Print conventions including knowing that writing has a left to right orientation, that a word is preceded and followed by a space; that there are letters, words, and sentences in a printed text, punctuation marks and how words differ in length;
• Book awareness and ways of handling a book.
Children who do not have a print rich environment at home need exposure to functions of print and understand the correspondence between speech and writing and engage with books before they can gain from explicit teaching of symbols of print like *aksharas*.

### 4.4.4 Phonological awareness

Phonological awareness is the understanding of the sound structure of language, i.e. sentences, which are made up of words, syllables and smaller units of sound; this knowledge is first developed orally. Children do not have to know the names of the letters or their corresponding sounds in order to demonstrate phonological awareness. Teaching of decoding or association of symbols (like *varna* and *aksharas*) with small units of sounds cannot begin unless children first recognize that spoken words can be divided into smaller units of sound. Once this awareness is well established and children are able to identify (and manipulate) these smaller units of sound in words including beginning sounds, they are ready to start learning the association of symbols with these sounds.

Phonological awareness develops at:

- **Word level:** Spoken sentences consists of individual units with meaning called words e.g., clear recognition that भेड़ नाम मूँ है (has four words). This can be taught during activities related to print awareness, by pointing out discrete words in the text.
- **Parts of a word:** Words are made up of smaller units of sound, i.e. *akshara* (syllables: चुरा / चुरा, बोलता: /चुरा/चुरा/)
- **Beginning or end sounds in words:** This skill is directly linked to teaching of letter-sound association or decoding and is often called phonemic awareness.

*Phonological awareness and concepts about print are the two most important foundational skills for learning decoding.*

### 4.4.5 Word recognition with a specific focus on decoding

In the early primary classes when children are learning to read or developing early fluency, they recognize/read words through the following processes:

- **Decoding:** Reading a word by sounding out each symbol (or a combination) and joining sounds to form the word.
- **Recognizing words as ‘sight’ words:** Words that have been decoded several times earlier and have become familiar become sight words that are recognized visually without decoding. As the number of sight words increase through reading practice, reading becomes more fluent.
- **Words that are not read at all** (or only a small visual clue is taken) but predicted from the context and sentence structure.

Decoding is ability to decipher written words and sound them out based on the relationship between the symbols (*varnas* and *aksharas*) and their corresponding sounds. It includes the following:

- The first stage in systematic teaching of decoding is to get children to understand and master the relationships between written symbols and the sounds they represent.
- Blending of sounds of various symbols in a word to pronounce the whole word.

Once a word is decoded, its meaning is automatically accessed if it is a familiar word.
Learning to decode and read words early and well is essential for becoming a skilled reader. Reading words accurately and almost automatically helps in developing reading fluency. If decoding is accurate and automatic, the reader’s working memory can devote almost complete attention to comprehension of what is being read. There is considerable research evidence that in the initial school years, increased decoding fluency is associated with improved comprehension. There is also evidence that if good decoding skills are not developed by Class 1 or early Class 2, children will continue to remain poor readers in later classes.

4.4.6 Vocabulary development

Vocabulary is the knowledge of words and word meanings. It is the total of all the words a student can understand and/or use during the process of listening, speaking, reading and writing. Vocabulary development is a life-long process. One relationship constantly found in research is that people with large vocabularies tend to comprehend better. Vocabulary is helpful in many ways: it helps in expressing one’s ideas, it is required to understand a text being read, and it helps in acquiring knowledge.

One of the most important aspects of learning a new language is to acquire extensive vocabulary of the language. Children who come from a different home language background have low vocabulary knowledge for the ‘standard’ language used in school. Early vocabulary development in the school language is especially important for these children. They may need some explicit teaching of even basic words in the school language that are assumed to be known by children when they first join school.

4.4.7 Reading with comprehension

Reading is an active process of constructing meaning from a written text. During reading, information from the text and the background knowledge and experience of the reader interact to produce meaning. Meaning-making is not confined to a simple understanding of the text. A reader should be able to actively engage, interact with and respond to a text by making inferences, forming opinions and making connections with other experiences. Skilled reading is a complex process and requires three broad strands to come together: (a) fluent word recognition (b) language comprehension and (c) motivation to read and understand.

Two major dimensions of reading comprehension
• Word recognition includes phonological awareness, decoding skills, recognizing sight words and developing fluency in word recognition.
• Language comprehension develops through developing background knowledge, vocabulary development, oral thinking and reasoning skills, listening comprehension, understanding different types of written language structure.

There is no reading without comprehension

If either of these two dimensions is weak, reading comprehension will be poor. For example, children who have not developed a good understanding of the SL maybe still able to decode words quickly. However, their reading comprehension will be poor because comprehension of the language is low.

Even when children cannot read themselves, opportunities to engage with books, to read books independently must be provided and children should be encouraged to read. This engagement with books helps children to also enjoy reading.
The best way to develop reading ability is for children to read more and more. Developing reading skills needs practice. To be able to recognize words quickly, children need to encounter these words again and again. This can only happen through regular reading practice.

Stages of reading development in pre-primary and early primary classes

Children go through different stages of reading until they become independent readers. Teachers should be able to implement appropriate reading strategies that would be most suitable for achieving different objectives, helping children acquire skills to read and understand.
4.4.8 Fluent reading

The three key elements of fluent reading are:
- Accuracy in word recognition
- Automaticity in word recognition
- Reading with expression (prosody)

Accuracy and automaticity in recognizing words is dependent mainly on two skills, i.e., a large sight vocabulary and proficiency in decoding. While reading fluently, the reader should be able to recognize and read words effortlessly and the focus of the reading process can be almost entirely on meaning-making. **Children who require putting in a lot of effort to decode are unable to devote attention to comprehension.** This is why it is very important to develop strong decoding skills in Classes 1 and 2. However, improving the speed of reading (often called oral reading fluency or ORF, and measured as the correct words read per minute) cannot be the sole objective of reading work in the classroom.

This relationship between fluency and comprehension is reciprocal. While fluency affects comprehension, it is not possible to read fluently (with expression) without comprehension.

**Enabling condition: Availability of children’s reading materials in the classroom that is easily accessible to children**
- Simple, illustrated and levelled texts like big books and reading cards to support development of reading skills
- Children’s good literature, especially simple storybooks
4.4.9 Writing

Reading and writing reinforce each other. Poor readers are also poor writers. Writing is considered the most difficult of the three main dimensions of language, viz. oral language, reading and writing, because it is not just presentation of thoughts or information in a logical and organized manner, but requires correct and formal use of the script and writing conventions. An effective language and literacy programme makes use of the reciprocal relationship between reading and writing, and between comprehension and composition.

The focus of writing work in pre-primary and early grade classrooms in our country is almost exclusively on copying and handwriting practice. Children are not expected to write in their own words. It is important that children understand that there are different purposes, audiences and forms of writing. Therefore, initially, the most important objective in pre-primary and Class 1 is for teachers to be able to get children to understand the communicative and meaningful purpose of writing—we write to make others understand what we want to say. For this, young children need to be engaged in meaningful writing activities, like drawing and scribbling to understand that writing has a communicative purpose and they can convey their thoughts and ideas to others through writing, even before they have learnt to write in the conventional sense (using letters).

The teaching of writing and its development in children in early primary classes has to follow a balanced approach—a balance between (a) writing skills like correct formation of letters and handwriting, correct spelling, punctuation and correct structure of sentences and (b) process of composition by thinking about the topic and audience, planning and organizing thoughts to make the communication effective, writing a draft, etc. Writing has to be correct and the content should be appropriate and meaningful.

The following are the four stages of writing development in early foundational learning period:
- Emergent writing-drawing and scribbling
- Introduction to conventional writing
- Structured writing skills at varna/akshara, word and sentence level (structured writing practice) (*while writing for expression continues*)
- Writing composition.

Children could be encouraged to write for a purpose, like labelling a drawing, making a greeting card or a letter or a rhyme even before they can write accurately.
## Summary of main principles related to the components of early literacy

1. Oral language development is the foundation of early language and literacy. Oral language activities should be continued from pre-school to Class 3 and beyond.

2. Extended oral work (opportunities for listening, conversation and explicit vocabulary development) is crucial for learning the school language. Children’s language should find place in the classroom for supporting better cognitive development and scaffolding for learning the school language.

3. Pre-school, especially one year of pre-primary and Class 1 should support development of emergent literacy skills, like print awareness, pretend reading, drawing and scribbling for expression before teaching of conventional literacy.

4. Teachers need to read-aloud from storybooks to children on a regular basis from pre-school to Class 3. Reading aloud to children from books along with interactive activities ‘before’, ‘during’ and ‘after’ reading helps develop print awareness, listening comprehension, understanding of written language, builds background knowledge, develop new vocabulary, provides a model for fluent reading and helps develop higher-order thinking skills.

5. Teaching of decoding should be systematic and through a variety of activities related to symbol-sound association, blending of sounds and word reading. It should involve play-based practice with cards, grids, dice, etc. By clustering a group of selected varnas and aksharas to be taught in groups, it is possible to get children to practise making words and simple sentences early in to the process of decoding. Fluency in decoding is a prerequisite for good comprehension.

6. Reading improves with practice. Most language textbooks do not provide enough short, simple and interesting texts for beginning and early readers. Children require simple and levelled reading materials, like reading cards and storybooks for reading practice to improve their reading skills. In addition, there should be good quality children’s literature and dedicated time, every day, when children independently engage with books. Classrooms must have reading corners with a variety of reading material including story cards, picture cards and a range of attractive story books.

7. A variety of reading strategies should be implemented during a language class in alignment with the ‘Gradual Release of Responsibility’ (GRR) model including read-aloud by the teacher, shared reading, guided reading, paired and independent reading by children.

8. Comprehension should be the focus of all reading activities in the classroom. Some explicit teaching of strategies for comprehension of a text, include predicting, visualization, asking and answering questions, grasping the main idea, summarizing, etc.

9. Learning to write is a balance between learning basic skills of writing and the higher-order ability of composing and expressing thoughts in a coherent manner. The teacher should provide adequate scaffolding through discussion, concept maps, word or sentence triggers, templates, etc. to support composition by children. The emergent writing phase of drawing and scribbling should be encouraged and considered as a developmental phase of writing.

10. Oral language, reading and writing development should go hand-in-hand and language activities could integrate all the three components.
4.5 Developing an Instructional Design for Pre-primary to Class 3

An instructional design includes the scope and sequence of expected student outcomes (or teaching objectives), the strategies or activities for teaching, TLM and assessment strategies to be used. It provides an overview of the progression of teaching objectives/expected outcomes over the year and how strategies/activities should be adjusted. For example, for Class 1, an instructional design could include:

i. Objectives, activities, materials and suggested instructional time for different components in different stages like (a) first 4-6-weeks emergent literacy or school readiness stage, (b) 7-24-weeks learning to decode phase (along with oral language and reading work) (c) 25-30-weeks a focus on beginning reading, etc.

ii. An illustrative plan for one day (60-90 minutes) for a particular phase that includes activities for different blocks like oral language development, decoding, reading (by the teacher, with children and by children), writing and (if needed) some differentiated instruction targeted at children who need extra support.

iii. A lesson plan for 3-6-days for teaching-learning a specific lesson or learning objective, say reading a lesson from a textbook.

iv. The year-long instructional design, sample weekly and daily lesson plans can be used by teachers to develop weekly and daily lesson plans that include: teaching-learning objectives; strategies for different components; teaching-learning material needed; assessment activities and strategy/activity for differentiated work for multilevel situation.

v. An instructional plan could be very detailed and structured, one that provides a day-wise list of teaching objective, activities and time to be devoted for each activity. For example:

<table>
<thead>
<tr>
<th>Week 11, Day 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revise the varna र and क for 3 to 5 minutes. Introduce the varna न. Use the following words नम, नरम, जहाज. Use hand actions up, in front for demonstrating. Show the varna card with न and ask them to repeat twice. Make the share of the varna on the blackboard in dotted form and move your finger on it. Ask children to come and do the same 3 times.</td>
</tr>
</tbody>
</table>

However, such day-wise rigid and prescriptive plans are not appropriate in our contexts when there is significant diversity in children’s ages, pre-school experience, literacy and print exposure at home and a variety of language situations (home and school language) and the actual learning levels of children. It is important for the Instructional Design (ID) to have a structure while allowing for flexibility for the different contexts and progress of learning of children.

A common format for presenting an ID could be as follows:
4.5.1 Component-related principles for developing instructional design

Detailed guidelines for developing instructional design and illustrative instructional design is presented in the accompanying Manual on Early Language and Literacy in the section on Instructional Design for Early Language and Literacy

Decoding
- Systematic and sequenced teaching
- Variety of activities and teaching material (grids and cards)
- Adequate practice of blending by children

Oral language development
- Not only in Class 1 but in all primary classes
- A variety of activities including discussion related to text

Writing
- Balance among different types of writing work (structured writing and composition writing)
- Shared, guided and independent writing (need for scaffolding)

Reading
- Various strategies and activities of reading-interactive read aloud by the teacher, shared reading, guided reading in pairs and small groups and independent reading by children.
- Not all the strategies need to be used with each lesson.
- A clear plan of activities to be done before, during and after the reading.
- Children need extensive practice with simple reading material like decodable text, reading cards, graded texts and story books.
- Dedicated time every week, for children to engage with storybooks.

Assessment
- Planning of continuous and periodical assessment.
- Changes in the teaching plan based on continuous assessment of learning of children.

Differentiated teaching
- Activities in the classroom to be done with the whole class, children working in groups, pairs or doing independent work.
- Support and revision for students identified needing additional help.

Enabling Conditions
- Increased instructional time for language teaching
- Relevant print material (posters of rhymes, word walls, storybooks) displayed in the classroom
- Availability of teaching learning material for children and teachers
- Selection of children literature, graded readers, reading cards, etc. available in the reading corner
4.6 Suggested List of Teaching Learning Material for ELL

Oral language development and print awareness
1. Materials for imaginative play – doctor set, kitchen set, dolls, gardening tools in pre-school
2. Pattern cards, seriation cards, bingo cards in pre-school
3. Puppets, masks and props for drama and role play (made at school)
4. Picture conversation charts
5. Selected picture cards for vocabulary learning and conversation
6. Picture story cards (a set of pictures depicting a story in sequence)
7. Posters of children’s poems
8. Big books of stories with simple texts (home language and school language)

Decoding and word reading practice
9. Varna and akshara cards for whole class activities (big size)
10. Varna and akshara cards for children (small size)
11. Akshara grids for blending activities and word formation
12. Dice and board games
13. Workbooks for writing practice during learning of decoding
14. Reading cards with decodable text

Reading practice
15. Graded reading cards
16. Children’s storybooks: A set of simple and interesting illustrated storybooks (at least 50-100 books for each class from pre-primary to Class 3) for different levels of reading abilities

Other materials
17. Drawing and writing paper
18. Crayons and colours
19. Stationery items like pencils, rubbers, stapler, pair of scissors, glue, chart paper, marker pens

Materials for teachers
1. A book of rhymes/action songs for teacher’s reference
2. Activity guidebook for activities for oral language, phonological awareness, vocabulary, decoding, etc.
3. Teacher handbook

Note: A pictorial item-wise list of teaching-learning materials is available in the accompanying Manual on Early Language and Literacy.
Chapter 5

Instructional Approach to Early Mathematics
5.1 Approaches to Teaching of Early Mathematics

Children at early primary classes would develop an understanding around different components of early mathematics, like numbers and number relations, number operations, measurement and spatial understanding, patterns and data handling. Learning as argued by the national focus group on Teaching of Mathematics⁴ should not only aim at developing concepts but also working towards higher aims like “mathematization of a child’s mind or developing inner resources.” (NCF, 2006). Helping children establish a connection among various sub-concepts, communication using appropriate mathematical language and reasoning, justifying, visualization, generalization, logical thinking and problem-solving are important processes which can contribute to the development of mathematical thinking or mathematization.

i. Mathematics as a problem-solving tool

Children should see mathematics as an important human activity or a problem-solving tool to help understand the social and physical world around, and solve everyday problems. Repetitive drilling of algorithms or memorizing facts without understanding can alienate/disengage a majority of learners. The tasks/activities **should make the learning of mathematical concepts meaningful and purposeful**. There should be an intrinsic problem or mathematical challenge in the task, which a child should find engaging and worth pursuing. Rather than introducing the concepts abstractly, the mathematical concepts can be introduced and built around realistic contexts or problems. These realistic contexts could be everyday life situations/contexts with a mathematical element or other mathematical tasks with which children can relate and feel a natural need or urge to solve. For example, let’s consider this problem situation: if a potter makes 8 pots in a day, how many pots will s/he have after 6 days of work to sell in the weekly haat? Contextual problems like these can help children appreciate the meaning of multiplication than learning multiplication simply as memorization of tables. Using realistic problems like these, children can be encouraged to think what information is given, what is the problem situation, visualize or think of a plan with an appropriate strategy to solve and find the solution for the given situation. Some children may feel confident using repeated addition, while some may do it by drawing a pictorial representation or through concrete materials, like *ganit mala*. Thus realistic contexts or problems can help develop a deeper understanding and engagement with the mathematical concepts. Let’s look at another example: make a tower of 10 blocks using only two colours. This problem can also be an interesting means to make children explore number facts of 10. Sarama & Clements suggest, “Children benefit from modelling a variety of situations and problem types with concrete objects, and also from drawing a representation to show their thinking, from explaining and discussing their solutions, and from connecting representations” (p.342, 2009)⁵.

The box on the next page illustrates various thinking steps which a teacher could use to enable children to think strategically while solving a problem. The use of realistic contexts or problems can be for various purposes like the introduction of a concept, developing or strengthening of the concept or application of the concept. Hence, the focus should not merely be on teaching standard algorithms and making children memorize various facts, but also to ensure a deeper understanding of various mathematical concepts and promote problem-solving abilities.

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ii. Appreciating mathematics as a system to talk, communicate and reason out

Mathematics has its own language, different from the everyday language in various ways. Often it has its own vocabulary, symbols and sign systems, which are unique and not often used in the daily lives. A child may be encountering them for the first time in a mathematics classroom only. For instance, ‘addition’, ‘multiplication’, ‘+’, ‘−’, ‘=’. Sometimes even familiar words have a different meaning (like, ‘jod’, ‘volume’, ‘odd’); or sometimes some words are used rather loosely in daily life (like, ‘wait for a second’ which actually can mean minutes and hours as well) unlike in mathematics. The mathematical language is specific and precise in nature making it an important means of communication and argumentation. A mathematically literate child is one who understands this vocabulary and sign system and is able to communicate using it effectively. On the other hand, mathematics classrooms often are teacher-dominated where children have to work on individual tasks to be mastered silently. According to the position paper on Teaching of Mathematics, NCF (2006) children should see mathematics as “something to talk about, to communicate, to discuss among themselves and to work together on”. The classroom practices should encourage young children to talk mathematically, justify their mathematical ideas through the communication of these ideas, which in turn displays level of mathematical rigor. For instance, let us peep into Class 1 of a mathematics classroom, where children are making a bunch of flowers using 7 flowers in all. They had hibiscus and marigold flowers to choose from.

Teacher: Take 7 flowers in all. Which ones do you wish to take?
The student shares about her friend and says: Leema took 5 yellow and 2 red. I like red more (pointing at hibiscus flower). I’ll take 6 red (pointing to hibiscus) and 1 yellow (pointing to marigold).

Teacher (asks the student): how do you know you have more of reds? The child puts her hibiscus flowers next to Leema flowers and says: I have 4 more of reds. I know 6 is more than 2.

What does this signify about the mathematics the child is learning here? This kind of number talk by the child signifies her ability to see numbers in a relation and in comparison to each other along with a higher-order ability to reason out and justify. Appreciating mathematics as a means to talk and communicate help develop higher abilities like logical thought, justification, explanation and making connections. A gradual approach for introducing each vocabulary or symbol along with its associated meaning through a variety of activities is required. The pedagogical sequence of concrete experience->$picture/iconic->symbolic can be useful in this regard. The introduction to the symbol comes little later or along with pictures or icons, which in turn can act as a context to facilitate meaningful learning of the given symbols or sign system. Children should also be encouraged to explain their thinking using appropriate mathematical vocabulary and symbols as they solve problems with concrete material or pictorially to help them internalize it. Working in groups, playing with cards and board games together can also be helpful to encourage children to talk and use mathematical language.

iii. Using concrete experience to develop abstract ideas

Developmentally, children in early classes are in pre-operational and concrete operational stage. On the other hand, various concepts of mathematics even in early classes (like number concept, place value, concept of unit in measurement, the unit of repeat in patterns) are abstract in nature. A deeper engagement using objects commonly available around like seeds, caps, marbles, hand-span and specific manipulatives like ganitmala, place value cards, dominoes, tens and units blocks designed for various mathematical concepts can play a significant role in learning with understanding. The teaching-learning process of mathematical concepts using concrete manipulatives can be useful for comprehension, visualization of the mathematical idea and strategy development. While children work with manipulatives, the teacher can deepen their understanding by asking questions like ‘how do you think we can solve the problem?’, ‘can this material be useful to solve it?’ Once the child has been able to successfully solve the problem, s/he can be encouraged to explain the strategy by asking questions like, ‘what were you thinking while doing it?’, ‘how did you find out’, etc. This will help other children to learn from that child and develop their own intuitive strategies, accelerate deeper learning of mathematical concepts, and develop appropriate vocabulary or mathematical language.

Once the concept has become familiar with the support of concrete experiences, the use of pictures, icons and visuals can help strengthen further the concept. Use of symbols and standard algorithms is thus postponed and can come at a later stage to help consolidate, generalize and formalize the learning of various mathematical concepts. The use of concrete models followed by related pictures/icons and symbols thereby aids visualization establishes connections between various mathematical concepts. This pedagogical sequence can form the basis for all sub-components across all grades for the teaching-learning of early mathematics.

Given the needs of young learners, especially in pre-primary and class 1, providing experiences using concrete hands-on material and manipulatives becomes imperative. Children from pre-primary and Class 1 would need ample hands-on experience with a variety of material on multiple occasions, to learn various abstract mathematical ideas and concepts.
iv. Encouraging flexible thinking and use of multiple strategies for problem-solving

What can be an effective strategy to add 2 to 99? Using standard algorithm and re-grouping first at the tens place and then at the hundredth can be a lengthy process. However, counting-on from 99 can be more convenient for many of us. Children should also think flexibly and develop their own strategies, depending on the demand of the task in order to become effective problem solvers. If children have a strong conceptual base for numbers, they can easily add 3 to 17. One need not wait for the child to first learn re-grouping, but can easily add using the knowledge of number facts. Similarly, a child while attempting to find out what 15 + 15 could be, may think and figure out: ‘since the double of 5 is 10 and the double of 10 is 20 so the double of 15 would be 30.’ To encourage flexibility and effective problem solving, children need to be equipped with various strategies apart from the standard algorithm. Allowing children to use invented strategies helps in making their procedures explicit, flexible and organized, and improve their problem-solving abilities. Children can be encouraged to think flexibly and use multiple strategies by following various classroom practices like: use of variety of problems and questions apart from closed-ended yes/no or one right answer practice-based questions. Open-ended tasks, like ___ + ___ = 18, can be more mathematically challenging and yet be solved at various level of sophistication; in here, children can have more than one answer, can explore how their responses are different from their friends and can also give the answer according to their level of cognition. Most importantly, children’s mathematical thinking can be triggered by asking how many answers are possible in all. It is during this exploration to find all the possible answer, a child is actually encouraged to develop strategies or think logically (for instance, starting with 0+18 and then increasing one to the left addend and decreasing one from right addend) and engage deeply with the mathematical idea/concept. Use of realistic context along with support from concrete materials like ganit mala can also be useful in encouraging children to think flexibly and develop effective problem-solving strategies. Once children have got enough concrete experience on ganit mala they can be transitioned to use number line and develop their own strategies. Asking children thought provoking questions like, ‘what way can we solve this; ‘why do you think this method can work; ‘can you solve it quickly; ‘did your friend also use the same method; can make children think and engage deeply with the mathematical strategies they use.

v. Developing positive attitude towards learning of mathematics

There is vast research on the strong dislike and negative attitudes children may develop towards mathematics even as early as in Class 3. Early learning should not only focus on developing mathematical competencies but also supporting children to develop a positive relationship with mathematics as a domain. The system needs to generate awareness on the strong affective responses mathematics as a subject can generate, and the pivotal role a strong foundation in early mathematics can play in pruning the negative image the subject has for many. Children should learn to enjoy mathematics and develop faith in it as an important and useful activity. School mathematics should help develop habits like perseverance, problem-solving, creativity, and curiosity.

5.2 Principles for Teaching-Learning of Early Mathematics

i. Children should find learning of mathematical concepts meaningful and purposeful:

There should be an intrinsic problem or mathematical challenge, which a child should find engaging and worth pursuing. Rather than introducing the concepts abstractly,
the mathematical concepts can be thus introduced and built around realistic contexts or problems. These realistic contexts can be everyday life situations/contexts with a mathematical element or other mathematical tasks with which children can relate and feel a natural need or urge to solve. The use of realistic contexts or problems can be for various purposes like the introduction of a concept, developing or strengthening of the concept or application of the concept.

ii. A mathematics classroom should work towards familiarizing children with its vocabulary and symbols:

It is possible that a child may be unfamiliar to the vocabulary and symbols specific to mathematics. A gradual approach of introducing each vocabulary or symbol along with its associated meaning through a variety of activities is required.

iii. Children should develop a deeper understanding around various sub-concepts of different components of mathematics:

Children should not learn concepts and algorithms/procedures mechanically but should be able to develop an understanding of the mathematics behind them as well. For instance, the child should know how numbers larger than 20 can be composed and decomposed using the understanding of the 10 based structure of our numeration system.

iv. Learning of mathematics should be mathematically challenging and enjoyable:

Mathematics classrooms dominated by mechanical repeated practice or rote memorization of numbers, definitions or facts can be disengaging for many children. To generate children’s interest the mathematics classroom needs to encourage learning by doing mentally engaging tasks. **There needs to be a variety of problems and questions.** Most importantly, children’s mathematical thinking can be triggered by asking how many answers are possible for a given problem. It is during the exploration to find all the possible answers a child is encouraged to develop strategies or think logically.

v. Children should be encouraged to develop their own strategies:

The teachers instead of focussing only on getting the right answer should encourage children to find multiple ways of solving a problem.

vi. An early mathematics classroom should work towards higher aims of mathematics learning:

Helping children develop reasoning abilities to explain, argument and justify logically and see mathematics as a problem-solving tool should be the objectives. For this, the classroom culture should empower children with a strong foundation of basic concepts by providing rich mathematical hands-on experiences, along with encouraging children to talk and argue mathematically using mathematically appropriate vocabulary and symbols.

vii. Teaching-learning of the early mathematics needs to deal with the various components of mathematics:

Numbers and number operations form a major portion of the early mathematics classroom especially in pre-school and Class 1. However, other components also need to be introduced out systematically during the early years to maintain a balance between the
different components and help learners view mathematics as more than numbers and arithmetic. Connections should also be encouraged between the various components of mathematics.

viii. Errors and misconception are an inevitable process of learning:

Errors or mistakes should not be seen as an obstacle. Instead, error analysis to understand the kinds of errors children make and find the pattern in them can be significant in understanding child’s thinking process and design further activities/instruction accordingly.

ix. It is important to equip every classroom with learning aids or mathematical manipulatives teaching-learning methods

Low-cost, multipurpose and durable, can help cutting cost and making early mathematics programme sustainable and scalable in the longer term.

5.3 Components of Early Mathematics

Learning of mathematics in the early primary classes often alludes to memorizing numbers and practising to master standard algorithms. Arithmetic, no doubt is an important skill to be mastered by children at an early age, however early mathematics needs to go beyond the mastery of rigid procedures of computational algorithms to a much deeper level of understanding of numbers and number operations as well as to include other components of mathematics, like shapes and spatial understanding, measurement, patterns and data handling.

5.3.1 Numbers and number relations

Numbers and number relations form the major component in early classes. Numbers lay the foundation for later mathematics learning as well, as they permeate almost all spheres of human life. The meaning of numbers is complex and depends on the various purposes they are used for. Numbers are used to represent the quantity of a group or set. For example, 5 goats, 10000 people, 8 flowers; here, numbers are used to denote the quantity, and is termed as cardinality. Numbers are also used for labelling or naming; for example, the roll numbers assigned to students in a classroom act as names in the particular context and is referred as the nominal aspect of numbers. Apart from cardinality and nominal aspect, numbers are also used for ordering items or things; for example, the fifth book in the rack.

Development of various mathematical concepts begins early in a child’s life. Infants can visually match and discriminate small quantities like 1 versus 3. However, adults start helping children in mathematics with an early focus on memorizing number sequence along with repeated writing of numbers. On the other hand, this practice of learning numbers does not ensure ‘counting’ abilities. Often, many children even by mid of Class 1 cannot count and take out 10 blocks/ crayons correctly and confidently. Knowledge of number sequence is undoubtedly important, however, it cannot be considered being an equivalent to knowledge of counting and numbers. Knowledge of number sequence is just one of the aspects in the process of counting, which otherwise is a complex process involving the understanding of ‘what to count’ along with ‘how to count;’ Gelman & Gallistel (1978)7 elucidated the following five principles involved in the counting process:

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a. The one-to-one principle refers to assigning one and only one distinct number name to each object of the group being counted.

b. The stable-order principle refers to the knowledge of number names in correct order without repeating or jumping any number name from the sequence.

c. The cardinal principle refers to the ability to comprehend that the last number name used to count the collection symbolises the whole collection as a quantity i.e. the numerosity.

d. The abstraction principle refers to the ability to distinguish two groups of the collection being counted. First, the objects already counted and the other comprising of the objects yet to be counted.

e. The order-irrelevance principle is the ability to appreciate that the quantity of collection remains same irrespective of the order in which the objects are counted.

The pre-primary and Class 1 mathematics classroom needs to emphasize on giving children ample counting experience with multiple objects or collections at various occasions, so that it can help children master these principles of counting, and contribute to their development of ideating with numbers. For instance, it is when the child experiences counting 5 balloons, 5 spoons, 5 books or clapping 5 times that s/he develops a sense of what 5 as a number may mean. Some of the other concepts to be built around numbers and number relations would be developing the concept of zero, what comes after/before, skip counting, compose and decompose bigger numbers (more than 20) using place value. It is also important to give children a strong sense of numbers by familiarizing them with various other number-related aspects or relations, like the concept of how each consequent number is one more, what comes after/ before, which is more or less, number facts (like 10 can be 2 and 8, 6 and 4, 7 and 3 so on), doubling (7 and 7) and halving. Usage of concrete material like play money, ganit mala, Dienes block, sticks, and bundles can support experiential learning of bigger numbers along with the 10-based structures.

5.3.2 Number operations

Arithmetic or the ability to add or subtract is one of the most valued component of early mathematics. Deal with problems of real life which involves change in quantity, combining quantities, and comparison of quantities, all of which can be an important life skill. The traditional practice of introducing and learning addition and subtraction with bare problems requiring repeated drilling and mechanical mastering of procedures can be disengaging and confusing to children leading to various errors and misconceptions. Children should find learning of number operations meaningful and purposeful. There should be an intrinsic problem or mathematical challenge which a child should find engaging and worth pursuing. Rather than introducing the concept of addition and subtraction abstractly, they could be introduced to building around realistic contexts or problems of everyday life situations/contexts with a mathematical element; or they could be given other mathematical tasks with which they can relate and thereby feel a natural need or urge to solve. For instance, Saamna found 4 kites, her brother Samay found 3 kites, how many kites do they have now?

Children can be supported to solve problems using concrete material, like beads, blocks where they are free to choose various strategies for addition like count-all or count-on depending on their comfort level. Concrete material and use of realistic contexts helps bring the subject of mathematics closer. The use of realistic contexts or problems can be for various purposes, like the introduction of a concept, developing or strengthening of a concept or application of a concept. This can be followed by pictures of objects or drawing of ganit mala on paper to further strengthen the development of the concept of addition for instance.
Symbols, like ‘+’ and ‘=’, can be introduced little later along with iconic stage. Laying a strong understanding around various number operations using concrete material and pictures helps children appreciate the specific meaning of the symbols and how they can be a means to convey the associated mathematical idea precisely. A foundation for multiplication can be laid at the end of early classes through skip counting, arranging concrete objects and drawing different multiplication facts/combinations of a given single digit number. Along with this, it is of significant importance that children should think flexibly and develop their own strategies surrounding various number operations, depending on the demand of the task to become effective problem solvers. Use of methods other than standard algorithms, like using number line, expanded addition/subtraction, use of concrete learning material or mental strategies, could also be a way to promote flexible thinking among children.

5.3.3 Shapes and spatial understanding

The teaching-learning process of geometry in early classes is about exploring the space around, developing spatial vocabulary, exploring basic 2-D and 3-D shapes, read and draw simple routes and maps. Children need to learn to identify, locate and position objects within a given space using spatial vocabulary like top-bottom, far-near, up-down and inside-outside, etc. Later, children also need the opportunity to sort and classify objects around, given the specific properties or features of the basic 2-D shapes (circle, rectangle, square and triangle) and 3-D solids (like cube, cuboid, cylinder, cone, sphere). Experiential learning like sorting, classifying, tracing objects (such as rolling, sliding) can help children observe, identify various elements or characteristics of these shapes. This is followed by tasks to encourage children explore and draw the relationship between 2-D and 3-D objects as well.

Reading and understanding of maps is another important life skill for which the foundation could be laid in early classes, wherein children could learn basic directions, think about routes using landmarks for instance; in later early classes they could be encouraged to read and draw simple maps. Observing simple line or object based rotational patterns in later years of early classes could also be useful for geometrical thinking.

5.3.4 Measurement

Measurement is the process of estimating, comparing or quantifying continuous quantities, like length, weight, and capacity. The ability to estimate, measure and compare objects skilfully can help a child comprehend and organize the physical world in an efficient manner. Measurement requires understanding of the attribute which needs to be measured (like length, weight, and capacity), how it is to be measured and developing a sense of what it means to measure the given attribute. Measurement of a continuous quantity is a process of assigning a number to the given attribute/quantity of the object based upon the unit being used. It involves learning about various processes, like the concept of unit, partitioning, i.e. the process of sub-dividing (mentally and physically) the object into congruent units\(^8\), unit iteration, i.e. repeating a unit without leaving a gap or overlapping, transitivity, i.e. if an object A is bigger than object B and B is bigger than C then A is also bigger than C.

The teaching-learning process of measurement could begin by comparing the length, height, weight of perceptually different objects and measuring height, length of surrounding objects.

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using non-standard units like hand-span, feet, etc. The task of comparison will become difficult when direct comparison is difficult; for example, if the length of a table is more than its height, the need for another object to measure the length and height of the table thus arises. Children would need hands-on or experiential tasks/activities to develop the idea of unit, measure with precision or to estimate closely the actual measurement. Tasks encouraging children to estimate, compare and order objects around on the basis of physical attributes like length, size, and weight using both standard as well as non-standard units should form a significant portion of primary mathematics. However, it is preferable to begin with non-standard units in early classes to develop a familiarity with the idea of unit and the other processes involved in measuring before moving to standard units and use of scale.

5.3.5 Patterns

The human mind loves patterns, which help us comprehend and organize the surroundings easily. In early classes, children need to be given opportunities to observe, identifying and describing patterns around. Extending a pattern and sharing the logic/reasoning would help in analysing patterns to understand the unit of repeat. To begin with for instance: while playing with concrete materials like stone, leaves, bindis, blocks, etc. children could be asked to put them in some order. Children should also be encouraged to extend and create simple patterns using colour, actions/movements, concrete objects, shape, and numbers. At the later stage of early classes, children are encouraged to extend simple patterns mentally and predict them. Patterns involving basic rotation of line and objects can also be appreciated by learners. This in turn can encourage thinking abstractly or generalization among children, which can serve as an important foundation for algebraic thinking, which children would need to learn in later classes and often find frightening given the poor early experiential base.

5.3.6 Data handling

We are flooded with information all around. It is important to develop abilities to handle the information, interpret it and critically analyse it, such that we can make informed choices and decisions. Information is based on data which is gathered from various sources by posing questions. Formulating and posing questions helps in understanding the complexities involved in the problem and how data gathering can help in it. Involving children in formulating and posing question themselves can help them understand the complexities involved in the problem situation and can also help them appreciate and evaluate the role of data handling.

Data handling broadly involves: identifying and framing the question(s); seeking, collecting and recording the data; organizing and displaying the data and lastly, interpreting the data or making sense of the data. Young children need to be given experiences/opportunities for collecting, recording and representing data from surroundings by using concrete icons and pictorial representations and then drawing simple inferences. Data handling skills developed in primary classes can contribute significantly to learning statistics at a later stage.

5.4 Developing an instructional design for pre-primary to Class 3

An instructional design (ID) includes the scope and sequence of expected student outcomes (or teaching objectives), the strategies or activities for teaching, TLM to be used and assessment strategies. It provides an overview of the progression of teaching objectives/expected
outcomes over the year and how strategies/activities should be adjusted. For example, for Class 2, an instructional design could include:

i. Objectives, suggestive activities, materials and suggested instructional time for different components in different time periods, like for number and number operations: (a) first few weeks for revision and reinforcement of counting, following the principles of counting, recognizing of numerals, ordering, comparing and estimation for smaller numbers till 20, solving simple addition and subtraction realistic problems using concrete material and various strategies; (b) during week 6-24 learning numbers up to 50, the concept of place value, along with learning to develop various strategies around addition and subtraction to solve various problems; (c) 26th week onwards extension of numbers up to 100, number relations, comparing and ordering, solving addition and subtraction problems effectively, single digit multiplication along with other components.

ii. A lesson plan for 3-6-days for teaching-learning a specific lesson or learning objective, say learning to develop various strategies around addition to solve various problems.

iii. Some illustrative plans for one day (up to 90 minutes) for a particular phase that includes activities for an important sub-concept like introduction to numbers, teaching of number, helping abstract number operation using realistic contexts, teaching of place value, developing concept of measurement using estimation and comparison of length, exploring the characteristics of various 2-D shapes/3-D solids, and predict patterns, etc. and (if needed) some differentiated instruction targeted at children who need extra support.

The year-long instructional design, sample weekly and daily lesson plans can be used by teachers to develop similar weekly and daily lesson plans that include: teaching-learning objectives; activities and strategies for different components; teaching-learning material needed; assessment activities and strategy/activity for differentiated work for multilevel situation.

An instructional plan could be very detailed and structured, one that provides a day-wise list of teaching objective, activities and time to be devoted for each activity. For example:

<table>
<thead>
<tr>
<th>Week 10, Day 3, Class 1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Teaching-learning objective</strong></td>
</tr>
<tr>
<td>-Teaching of number 25</td>
</tr>
</tbody>
</table>

However, such day-wise rigid and prescriptive plans are not appropriate when there is significant diversity in children’s ages, pre-school experience, exposure at home, learning needs and the actual learning levels of children. It is important for the instructional design to
have a structure while allowing for flexibility for the different contexts and progress of learning of children.

**A common format for presenting an ID is as follows:**

<table>
<thead>
<tr>
<th>Teaching objective</th>
<th>Activity</th>
<th>Material to be used</th>
<th>Time</th>
<th>Assessment Differentiated teaching</th>
</tr>
</thead>
</table>

Detailed Guidelines for developing instructional design and illustrative instructional design is presented in the accompanying Manual on Early Mathematics in the section on Instructional Design for Early Mathematics.

**5.5 Suggested List of Teaching Learning Material for**

1) Concrete materials, like beads, strings, counters, bindi packs, marbles, counters, for multi-purpose use.
2) Unifix blocks – concrete connected blocks
3) Sticks in different sizes, boxes of different shapes and sizes
4) Sorting kits using various basic shapes in different size, colours
5) Building 3-D blocks in various shapes and sizes
6) Puzzles for logical reasoning
7) Counting trays, *ganit mala*, number grids (1-10, 1-20, 1-100)
8) Number dominoes with dots on one side and respective numeral on other
9) Number cards (with pictures, with dots and with numerals)
10) Dot dice (1-6), number dice (0-5 and 5-10)
11) Place value cards
12) Play money
13) Dienes blocks
14) Transparent measuring containers in various shapes and sizes
15) Packets of beans and seeds weighing in various measures
16) Basic 3-D solids (like cube, cuboid, sphere, square-pyramid, cone)
17) Measuring sticks, rulers with cm and m marking
18) Simple weighing balance, weighing scales of various measures like 50 gm, 100 gm, 500 gm, 1kg, 5 kg
19) Origami sheets
20) Picture cards for spatial understanding
21) Calendar
22) Simple manual clock
23) Stamping pads and stamps of various 2-D shapes
24) Multiplication table chart

**Note:** A pictorial item-wise list of teaching learning materials is available in the accompanying *Manual on Early Mathematics*. 
Chapter 6

Assessment for Learning
An effective early learning programme is one where the instructional design integrates high quality classroom-based student learning assessments in the teaching-learning process. This chapter focusses entirely on classroom-based assessments that are implemented and analysed at school level for follow-up action within each classroom. Assessments have a strong potential to bring about improvements in student learning. Large-scale assessments on a sample or census basis have limited value in bringing about change at the classroom level.9

6.1 Purpose of Student Learning Assessment

Conducting assessments is not an end in itself; the basic purpose of conducting assessments is to support and improve every child’s learning. Assessments help to establish where learners are in their learning continuum. Analysis of well-designed assessments should help teachers understand what children are able to do, what they are struggling to understand or do and modify teaching accordingly. For young children in pre-school and early primary classes, assessments should look at the improvement in learning over time, rather than comparing performance on standardized assessment tests. The cycle of assessment and improvement in learning is shown in the diagram:

6.2 School-based Student Assessments in Early Primary Classes

There are three main types of school-based students’ assessments

- Formative assessments
- Summative assessments
- Baseline assessments at the beginning of the academic year

The focus of these assessments should be to use them to improve student learning through the following three-step process:

- Regular checks of learning progress
- Identifying learning gaps and difficulties for individual students
- Follow up with corrective, additional measures

6.2.1 Formative assessment

Formative assessments are informal and on-going assessments that are an integral part of the teaching-learning process. Formative assessments are low-stake assessments for both students and teachers.

Formative assessments help teachers to adjust the teaching-learning process on an ongoing basis, and create further learning opportunities/activities for children to develop a better understanding of concepts and practice skills.

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9 Large-scale assessments serve an entirely different purpose of identifying the status of learning on some selected parameters across geographical units (like states, districts or blocks), disparities across gender and social groups, class sizes or teacher qualifications or some other factors that could inform policy reform and trends over a period of time.
**Strategies:** Observing children while they participate in activities, listening to children, reviewing children’s worksheets during classwork, asking questions, short oral or written tests, asking children explicitly if they have understood, etc. are some strategies. At pre-school and early primary stage, teaching-learning activities themselves provide the basis for such ongoing observation and qualitative assessments of children.

Some examples for formative assessments for ELL and EM are listed below:

a. **Early language and literacy**
   - Children’s response to what and where questions based on a story narrated in class and listening to their conversations for the use of vocabulary and expression of logical thought
   - Observing children while they work in small groups, during guided reading or making new words using grids, reading familiar text with fluency
   - Assessing class test booklet / worksheet on a specific skill area
   - Reviewing and correcting the child’s work in the workbook or worksheet
   - Asking questions on a specific text, story or lesson
   - Asking children to retell a story in their own words or talk about the central idea of a text
   - Asking children to read the letters or words written on the blackboard or word wall
   - Asking children to make questions on a story and give their own answers.

b. **Early mathematics**
   - Observing children as they count concrete objects. Identifying if the child is able to associate one number name to one object, says the number names in correct order without missing,
   - Asking children to recognise basic 2-D and 3-D shaped objects in their environment and asking them to share the criteria or characteristics used.
   - Asking children to explain and argue on the correctness of the solution to the problems/ puzzle.
   - Observing children when they classify, compare and organize objects as per a criteria
   - Observe if the child identifies various patterns in calendars, number grids and multiplication charts.
   - Children can be asked to collect information/data from surroundings on some topic. Observe children ability to pose question precisely, record the data and draw simple inferences

c. **Monitoring and recording children’s learning progress**
Teachers should not be expected to maintain detailed child-wise qualitative records of formative assessments done on a regular basis. Two useful records of noting children’s progress on an ongoing basis are:
   - Portfolio of children’s work including worksheets, drawings, etc.
   - Progress record of achieving specific competencies: This can be recorded on a weekly/ fortnightly basis or as and when children attain that competency. This record should help teachers keep track of individual children’s progress and plan for extra support as needed, rather than for documentation to show visitors and supervisors.

The following table includes a suggestive list of select indicators, which a teacher could use in monitoring the progress of each child in Class 1.
<table>
<thead>
<tr>
<th>Indicators for the learning objectives (oral language)</th>
<th>Frequency</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listening and speaking with comprehension</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is able to recite frequently-heard poems</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is able to describe and discuss a picture in a group and individually</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is able to connect the picture with personal experiences and talk about it in their language</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Listening to a question and able to respond to it</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: CCE format used by schools of Government of Rajasthan

More indicators can be added using the following points for describing children’s learning outcomes:

**Reading and reading with comprehension:** Is eager to read books; is able to identify objects with their names in a picture; is able to recognize the *varnas* and *aksharas* that have been taught in class; is able to read new words independently with *varnas* taught in class (घ, र, छ, च); is able to read simple words with *matras*.

**Writing:** is able to write letters and words correctly while copying them; is able to write new words clearly; is able to write words using the *varnas* and *aksharas* learnt.

The Ministry of Women and Child Development has developed a format for maintaining record of progress of children who attend preschool at the anganwadi centre. The record-keeping format has been developed for different age groups, 3-4, 4-5 and 5-6-years, covering all five domains of development. The anganwadi worker is expected to assess the progress of every child on a quarterly basis and share it with parents.

**6.2.2 Summative assessments**

Summative assessments are conducted periodically, in a formal manner, usually covering a set of competencies or units of the curriculum. Summative assessments are done to assess how much children have learnt at the completion of a unit or a specific component of the curriculum or at certain time of the academic year. These can also be conducted on a monthly or bi-monthly basis. Typically, a summative assessment will also include assessment items for concepts or skills learnt during a previous period too, and not just for the competencies taught in the period at the end of which the test is held. For example, a test after 6 months in Class 1 would include letter recognition in addition to reading of familiar words or in case of mathematics children would be able to do a simple word problem using number operation of addition. This would help identify what children can do in addition, to what they are not able to do or do well. The results of the assessment are often presented as a grade or a score obtained by a child.

When designed well, with a clear focus on specific concepts or skills, summative assessments can be used by a teacher for:

- Identifying specific learning area, topic or skill that needs further focus

10. [http://www.wcd.nic.in/sites/default/files/CHILD%20ASSESSMENT%20CARD%203-6%20YEAR%20OLDS.pdf](http://www.wcd.nic.in/sites/default/files/CHILD%20ASSESSMENT%20CARD%203-6%20YEAR%20OLDS.pdf)
• Understanding if children need additional practice in a particular skill
• Identifying children who perform below expected level and organize additional instructional support.

The head teacher and/or CRC could help teachers analyse results from the summative assessment and develop a plan of action for supporting different groups of children according to their learning level.

**Strategies:** Summative assessments can be carried out using oral tests, worksheets or test papers and projects. These assessments are designed according to the specific competencies or milestones that children should have achieved at the end of a stage or phase of implementation of the curriculum.

Some examples of a summative assessment - languages and literacy.

**Objective:** Ability to read words of varna and akshara that have been taught (Class 1)

**Objective:** Ability to write simple sentences using a concept organizer (Class 2)

6.2.3 Baseline Assessment at the beginning of the academic year

Baseline assessments are done at the beginning of a school year or term. It is undertaken to identify the children’s prior level of learning so that the teacher (who may have not worked with the children in the previous class) can identify:

a. Concepts/skills to be revised and the level to be adopted for further teaching for the entire class.

b. Children who need extra support to learn and practise basic skills in the first few weeks of the new class (or for a longer period). The teacher could organize the class in same-level groups during the revision period of 4-6-weeks (at the beginning of the year) for a
bridging intervention. At the beginning of Class 1, a baseline assessment would help to understand if children have had some exposure to print at home or during pre-school; their understanding of the school language and recognition of letters.

c. When children transition from pre-school or pre-primary class to Class 1 the baseline assessment should focus on the school readiness skills of the child. The IECEI study, 2017, used a school readiness tool covering the following areas of school readiness: following instructions, reading readiness, identifying beginning sounds, sentence making under pre-literacy and language concepts; pre-number concepts, number / object matching, relative comparison, space concept, sequential thinking, pattern making and classifications for pre-maths and number concepts and cognitive concepts for learning of maths. For further details on the tool the Centre of Early Childhood Education and Development, Ambedkar University, New Delhi, can be contacted.

The baseline tests could be formal assessments designed carefully to assess children’s levels in major concepts or skills. Some programmes develop these tests centrally. They also develop the instructional design for the revision and bridging instruction of a few weeks. Teachers would gain from guidance around the analysis of the baseline test, grouping of children and teaching-learning activities/materials for the bridging intervention.

6.3 Recommendations

i. Classroom-based assessments should be a combination of both formative and well-designed summative assessments. Summative assessments maybe planned for 3-6 times during the year, linked to a set of core competencies, such as the ability to read or write familiar words, read a simple sentence, answer comprehension questions after reading a text, etc. For mathematics, children should be able to solve simple word problems using number operations; are able to handle data and present information, recognize different shapes in everyday life objects, etc.

ii. Major milestones (learning outcomes) to be achieved for ELL and EM should be identified for each class. Teachers should have a bank of simple and appropriate test items for assessing progress towards these major milestones. Teachers should be expected to update progress of individual children on each of these milestones on a regular (say monthly basis).

iii. Teachers’ capacity building is needed for (a) simple formative assessment strategies for ELL and EM and how to integrate them with the teaching-learning process; (b) developing worksheets and questions on specific competencies and analysis of the results of student assessment for follow-up action. This is a highly neglected part of in-service teacher professional development programmes. Such capacity also needs to be developed for academic resource persons at CRC, BRC and DIET.

iv. The focus of any assessment strategy should be on use of results to provide feedback to students and work specifically with children who need additional support. Frequent revision and extra support for specific groups of children (based on summative assessments) should be an integral part of the instructional design.

v. Simple, illustrative and easy to understand report cards can be developed to share feedback with parents.
Chapter 7

Teacher Professional Development for Early Learning
Research shows that an inspiring and informed teacher is the most important school-related factor influencing students’ achievements. Therefore, it is critical to plan and implement high quality pre-service education and continuous professional development programmes for, both new and experienced, teachers. The best professional development is ongoing, experiential, collaborative, and connected to the existing classroom situations.

7.1 Pre-service Teacher Education

An analysis of the pre-service teacher education courses for primary school teachers in several states reveals that even after the recent revisions in the curriculum for pre-service training, there is very limited focus on teaching-learning of early language, and literacy and mathematics. Attention to topics around understanding development of young children in the 5-8 age group; how they learn and what are appropriate practices for teaching young children is negligible. The focus is more on upgrading content understanding for higher grades. Issues, like diversity of contexts, including language diversity and multilingualism and classroom practices for such situations, are not emphasized.

Teacher preparation programmes for those working with the very young children below the age of 6-years are equally crucial. Pre-school teachers need to understand the need and importance of creating learning environment for children which are joyful, play-based and developmentally appropriate. Preparation of teachers for this stage therefore requires teacher educators who possess a sound educational philosophy of ECE besides an understanding of its specialized content and methodology. A study on Preparing Teachers for Pre-school Education by Ambedkar University and NCTE (2012) points out that there is an inequitable distribution of teacher education institutions that offer pre-service programmes on ECE. The study also found that there was no induction training or orientation for teacher educators who are expected to provide training to pre-school teachers.

7.1.1 Recommendations for pre-service

a. Focus on early years: The pre-service (D.El.Ed.) curriculum and its implementation need to include papers/modules specifically focussed on child development and learning for the foundational years for children in the age group 3-8 years, or at least, 5-8-years.

b. Beliefs and attitudes: The curriculum should aim at helping student-teachers to recognize, confront and transform some of their beliefs and attitudes around (a) children’s capabilities and their prior knowledge; (b) issues of equity, equality and diversity; (c) attitudes or biases about specific social and cultural groups, children’s languages and home backgrounds. These topics will require a very different classroom pedagogy and capacity of the faculty.

c. Specific papers/courses for early language, literacy and mathematics: D.El.Ed programmes should have specific ELL and EM papers/courses that help student-teachers understand: (a) pathways of language and literacy and early mathematics development; (b) approaches to teaching of language, literacy and mathematics in the pre-school and early primary classes; (c) specific pedagogies and methods for language, literacy and mathematics. Intensive orientation of faculty of training colleges will be necessary to prepare them for these courses.

d. Practicum focus on pre-primary and early primary classes: The pre-service curriculum should provide structured exposure during the practicums to good early language, literacy and mathematics practices in demonstration schools, as also scope for student-teachers to practise methods learnt in the ELL and EM papers.
e. District Institutes of Education Training (DIETs) to offer ECE programmes at the pre-service stage: This will ensure equitable distribution of institutions providing this training.

f. Building capacities of teacher educators: Preparation of a curriculum framework and development of norms and specifications for a pre-service course for Teacher Educators in ECE consistent with the National Curriculum for Teacher Education (2009).

g. Focus on capacity building of the anganwadi workers: The ICDS programme in its pre-service training of AWWs, needs to emphasize the importance of early learning continuum from pre-school to early primary grades. The AWW should get training for implementing developmentally appropriate activities in a planned and structured manner so that children in the age group of 5-6 years are ready for a smooth transition to primary school. Overall, the pre-school education component of the induction training of AWW needs to be strengthened significantly.

7.2 Continuous In-service Professional Development

Effective and regular professional development programmes, regular academic support and peer-learning opportunities can help and motivate teachers including pre-school teachers and anganwadi workers to gain new knowledge and adopt improved practices.

7.2.1 Current scenario

Today, most in-service training programmes for school teachers are centrally designed at the state level, and often do not address real classroom issues, like multilevel learning situation, language diversity, etc. Many training programmes cover topics for all primary classes and are not focussed on early primary classes. Training sessions are often delivered in lecture mode, with little discussion, reflecting a lack of understanding of ‘adult-learning’ principles; there is inadequate scope for experience sharing and practising new methods to build conviction about new practices. Trainings are not followed up with refresher workshops and on-site or other forms of mentoring for teachers.

Since pre-school education in schools is not covered under any programme or schemes, in-service training is a major challenge across states and municipal corporations running pre-primary sections. In most cases, the training is inadequate.

As regards anganwadi workers who is a multi-purpose worker and is responsible for handling six services and may not be adequately educated, at best receives 4 to 5 days of job training on ECE. Regular professional development focussing on pre-school education is not systematic.

7.2.2 Overall recommendations for in-service professional development for ELP

a. Design teacher preparation programmes for the foundational stage: As recommended in the IECE 2017, a customized teacher education curriculum for the foundational stage of education should be designed covering the continuum from pre-school to the early primary grades in an upward continuity, to meet the specific content and pedagogical requirements.

b. Acknowledge and address professional needs and status of pre-school teachers/educators through professional training and appropriate work expectations and institute an appropriate teacher cadre in the system: A dedicated pre-school teacher/educator with adequate qualifications, training and appropriate career opportunities be ensured in every pre-school education programme.
c. **Trainings focussed on early learning (ELL and EM):** Training programmes should be planned specifically for foundational learning for language, literacy and mathematics including topics, like how young children learn; working with diversity in children; understanding the major concepts, components and pedagogy of early language, and literacy and mathematics; use of appropriate teaching-learning materials; and assessing student learning and follow-up.

d. **Consistent and phased implementation:** Ongoing professional development should have a vision and roadmap with consistent inputs over a period of 3-5 years in a phased manner (through a variety of strategies). Conducting programmes in a phased manner helps teachers assimilate what they have learnt, try out new practices with children in their class, and reflect on the new knowledge learnt. When planning the follow-up phases of training, there must be provision for teachers to share and reflect on their implementation experiences.

e. **Professional development for all those involved in programme design, training and academic support:** Often training programmes are developed only for teachers. Continuous professional development is a must for all stakeholders including head teachers, master trainers, cluster and block resource persons, DIET and SCERT faculty, school inspectors and education officers, etc. Orientation programmes must also be planned for the School Management Committee (SMC) members about the new programme. These trainings or orientation programmes can help build a common understanding about the change in practice, expected results from implementation, roles and responsibilities of stakeholders.

### 7.2.3 Recommendations for planning training for an Early Learning Programme

a. Professional development should be targeted for teachers who teach early primary classes in the school or are subject-specific teachers for language and mathematics in the primary sections and are expected to teach children in classes 1 to 3. Padhe Bharat Badhe Bharat (PBBB), MHRD’s framework for early learning suggests that states must ensure that there must be a dedicated teacher as per the enrolment norms for Classes 1 and 2. As far as possible there should be at least two teachers for the 4-years of the continuum from pre-primary to Class 3.

b. In case there is a pre-primary class or pre-school within the school with dedicated teachers, their professional development must be planned with a specific focus on foundational skills for language and literacy and numeracy and mathematics. A suggestive 5-day plan specifically targeting the pre-primary class teacher is shared in the accompanying Manual on Pre-school. This training plan can also be used for AWW for their refresher in-service training to strengthen the pre-school programme.

c. Training for early language, and literacy and mathematics must be planned and implemented separately, i.e. ELL and EM separately.

d. Training should be planned in a phased manner, a suggested plan for the first year of training could be as follows:

- **Phase 1:** 5-days (to coincide with the start of the new academic session);
- **Phase 2:** 2-3-days (3-4 months after the first phase) to (a) discuss issues in implementation based on feedback from school visit observations by resource persons; (b) sharing of experience of implementation by teachers; and (c) focus on topics and concepts that need reinforcement; and (d) strategies and activities for the next few months;
- **Phase 3:** 2-days (6-8 months after the first phase) for introducing strategies and lesson plans for the remainder of the year.
Trainings should be interspersed with monthly follow-up meetings at cluster level and onsite visits by resource persons. A detailed illustrative session plan for the first 5 days for ELL and EM is presented in the respective Manuals.

e. Training of master trainers at different levels must be planned carefully and for adequate number of days as has been discussed under Section 7.3 (v).

f. Availability of all materials required for the training programme including training module, supportive materials for the training sessions, like handouts, videos, reading resources for teachers, teaching-learning materials to demonstrate and use for practising implementation of the instructional strategies, teacher handbook, etc. should be ensured prior to organizing the training.

g. Training programmes should be planned such that the academic support teams receive training ahead of the teachers and the school heads are oriented soon after teachers are trained. This will ensure that teachers are supported in the initial period of implementation.

h. All essential teaching-learning material, that the teachers will require for implementation, must be made available at schools soon after the training programme or at the end of the training itself.

A suggestive framework for Teachers Handbook with some sections detailed out is available in the accompanying manuals for ELL and EM.

7.2.4 Recommendations for training workshops

Training workshops for teachers should be relevant to their classroom situations and provide an opportunity for experiential learning. They should motivate teachers and provide enough strategies for classroom implementation.

a. Trainings adapted to local contexts: Strategies and activities discussed during training should be suitable and relevant for the existing classroom situations where there is diversity of experiences, languages and social backgrounds. Training programmes should address real problems faced by teachers, like multigrade and multilevel learning situations.

b. Incorporate adult learning principles: There should be ample opportunities for teachers to share ideas, questions, opinions, experiences, concerns, etc. Their views should be valued. Training should not be merely a one-way transmission of information and a pre-decided ‘package’.

c. Focus on demonstration and practice: A training workshop should provide teachers with opportunities to get hands-on experience for designing and practising new teaching strategies and activities, e.g. in a language and literacy training programme teachers should get to practise story telling using puppets or masks; interactive read alouds with before, during and after reading activities; use of different teaching-learning materials, like dice, grids for teaching decoding or in case of mathematics getting teachers to use domino cards, number cards and beads for teaching different concepts. Training programmes that include practice sessions within the workshop setting and, wherever possible, in a school setting help build teacher understanding, confidence and acceptance of a new programme.

d. Active learning strategies: Workshop sessions should be participatory and experiential using a variety of strategies, like presentations, classroom simulations, demonstration of
activities, group discussions, sharing stories and examples, showing videos of existing or ideal practices followed by reflection, making of TLM, reading and discussing theme or topic-based handouts, etc. Videos are very effective in showing good practices, like videos of an interactive read-aloud or a print-rich classroom or use of ganitmala. Short handouts that provide visual depiction of new concepts and practice (e.g., place value) help teachers to recall what is discussed during a training session. Teachers should be able to carry back videos and a collection of handouts after the training.

e. **Preparation of master trainers for training of teachers**: Training of state and district resource persons and master trainers is a very crucial part of planning of professional development of teachers. Often, master trainers receive training for only a few days and they are prepared just for delivering the exact content of the training module. It is important that master trainers sit in workshops and practise strategies in classrooms with children for at least 7-8-days (for a 5-day teacher training programme, so that they have a strong conceptual understanding and can facilitate the sessions with confidence and demonstrate different activities.

### 7.3 Recommendations for Other Professional Development Strategies (apart from face-to-face workshops)

i. **Crucial role of regular academic support**: Ongoing academic support to teachers is a crucial input for improving the quality of education. It is even more crucial when a new learning-focussed programme is implemented. In educationally advanced countries, any new learning improvement programme is usually implemented with a comprehensive component of coaching and mentoring support for teachers. Coaching and mentoring, includes classroom observations, demonstration of activities and discussion with school staff; in the initial stage of implementation it helps teachers overcome the challenges and the frustrations that come from using new instructional methods. An ideal **ratio of schools to coaches in the initial phase is between 5:1 to 7:1**.

This may not be feasible for most programmes implemented at a scale in our country. In our context, the availability of resource persons at block and cluster levels (BRC/CRC) levels is quite varied across states. Also, in most states, they are burdened with many administrative tasks. Some early learning programmes, like the ones implemented by Pratham and CARE India, have involved CRCs and BRCs/BRPs in supporting a new learning initiative. This has shown good results.

In the initial phase of implementation, the technical support agency could also provide this coaching and mentoring through specially trained personnel, like Literacy Coaches of Room to Read. In such situations a transition plan for shifting these responsibilities to CRCs and BRCs, must be put in place.

It is important to invest in the professional development of these academic resource persons (including master trainers, who may be good teachers) to develop in them a strong understanding and commitment to the approach and the programme, they in turn can guide and motivate teachers and create a supportive ecosystem.

Some steps that could be taken to strengthen the regular academic support to teachers for a new early learning programme include: (a) cluster and block level resource persons are provided with extended orientation and practice for the new strategies; (b) they receive simple handouts and videos that help prepare them for explaining concepts and demonstrating activities to teachers (LLF has developed a resource pack including videos,
handouts and activity handbooks for CRCs/BRPs and master trainers for ELL) and (c) provide funds for frequent travel to schools that they support.

ii. **Promote collaboration and peer learning:** Collaboration with other teachers can help in collective learning, problem solving, reinforcing of learning and gain from new ideas, expertise, experiences and insights from peers who are in similar situations and circumstances. This collaboration can be promoted through professional learning communities (PLCs) that are specific to a theme, e.g., selection and development of children’s graded reading material or for an overall subject. The members of PLC can physically meet on a regular basis when member teachers are located in a geographic cluster as has been developed in the state of Chhattisgarh. In Karnataka, subject teacher networks have been developed with the help of Karnataka Open Educational Resources (KOER) wiki that has been developed. A similar resource can be tried out for ELL and EM.

iii. **Diversified strategies for continuous professional development:** While ensuring continuous professional development, it should not be limited to face-to-face workshops. It could include:
- Study groups (professional learning communities) among peers focussed on a shared need or topic.
- Monthly meetings at cluster/block level to learn a new strategy, plan lessons, and address classroom issues, like analysis of student assessment results.
- Distance and blended learning courses that offer online reading, mobile-based resources, print materials, audio and video materials, etc.
- Self-learning resource material in print and video format (for mobile phone viewing) that can be regularly sent to teachers and resource persons at block and cluster level.
- Conferences and seminars to learn from a variety of expertise from around the state or country.
- Field visits to observe other teachers in their classrooms.
- Coaching and mentoring by an expert teacher.

iv. **Learning from schools including pre-primary sections or anganwadi centres that are ‘living’ the change:** Nothing is as convincing for teachers and head teachers as to see examples of schools and classrooms where changed practices can be seen in regular practice. For this it is recommended that some schools are developed as demonstration schools (as a part of the phased implementation of an early learning programme), as has been done in the EGRAN programme of the Government of West Bengal and by Room to Read, where teachers can go and observe actual classroom practice and implementation of the new approach and strategies with children.

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**Case Study: Developing an online repository of resources for practising teachers in Karnataka.**

The wiki is built by a community of educators who are engaged in the creation, review, curation and publishing of digital curricular resources on a continuous basis. This resource repository is embedded in the Subject Teacher Forum that has been built across high school teachers of Karnataka. The repository of resources support practising teachers in their professional development as well as improving classroom processes.

Further details are available on the link.
Case Study: Professional Learning Community (PLC) of Teachers - Chhattisgarh

Professional Learning Communities (PLC) are seen as an important strategy for continuous professional development of teachers.

a. What is a PLC?

It is a community of teachers who are motivated to
- Improve their classroom teaching practices and skills
- Learn further and more about their subject areas
- Be connected with experts
- Trying out various innovations in their classrooms
- Working with support from their colleagues
- Improve learning levels of children in their classrooms
- be actively engaged and are reflective of their practices

b. How does a PLC work?

Starting with a few active members, the PLC can continue to add other members. The PLC should undertake work that is relevant to classrooms in their areas, e.g., incase the PLC thinks that teachers need support for conducting a variety of activities with children in the classrooms, members should take responsibility of identifying resources to develop new activities.

When the PLC has put together a collection of activities and a team of persons are ready to demonstrate them, an orientation programme for teachers can be organized at the cluster or block level. Incase it is not feasible for all teachers to come together to a location, videos of conducting the activities with children in the class can be made using mobile phones and can be shared through social media.

In order to make the PLC effective, it should work along with the cluster, block resource centre and the DIET. The PLC should share its work plan with these institutions and also support teacher development activities held there. The PLC should ensure active participation in the meetings and teacher training programmes.

c. Some suggestive areas for PLCs

- Subject specific PLC
- Development and use of teaching-learning material
- Innovative teaching
- Improving school-based learning assessments
- Compilation and developing self-learning materials for teachers

Further details about the PLC are available on the link.

Chapter 8

Community Engagement
Community Engagement

Children succeed when the environment at home, in the community and at school is supportive and caring. Parent and community participation in the early learning process can maximize the learning outcomes of children. A successful partnership between parents, community members and the school will ensure improvement in quality of education for all children.

Teachers need to develop an in-depth understanding of the home backgrounds of children as this can provide valuable inputs for designing learning experiences for children in the classroom that take into account their context, culture and prior experiences. This understanding of the child and her family could include literacy background of family members, language spoken at home and in the community, exposure to print including books at home, nature and extent of support for children’s education at home and local culture.

There have been several successful examples of involving the community and parents in the learning of children. Parents, even if they are not educated or literate, can play an important role in enhancing the education of their children at home.

8.1 Need and Importance of Community Engagement

An actively engaged community can help in several ways:

- Ensure that the local context and culture and language become a part of the school process.
- With appropriate training, they are capable of demanding and monitoring school accountability, including monitoring teacher attendance, managing school finances and resources, and assessing learning outcomes.
- Teachers need support and recognition from communities to perform effectively; parents need guidance from teachers and other school personnel to understand how they can support their children’s learning; holistically, this helps maximize learning.
- Communities that have a sense of ownership and an understanding that the initiative is for the betterment of their children and their community, contribute local resources willingly.

8.1.1 Current scenario

Currently, school management committees (SMC) are supposed to monitor the working of the school, prepare the school development plan and ensure appropriate utilization of the grants received from the government. So far, it has been seen that SMCs have largely been involved in issues other than quality of learning of children in school. The school development plans are focussed on improving school infrastructure, rather than addressing issues of learning. While states invest in capacity building of SMC members, this too has become routinized.

The RTE Act 2009 mandates that teachers hold regular meetings with parents and guardians and apprise them about the regularity in attendance, ability to learn, progress made in learning and any other relevant information about the child. However, schools are hardly seen implementing parent–teacher meetings to discuss issues related to learning of children and involving parents in supporting children at home.

When local communities, parents, SMC, teachers, gram panchayat members, the standing committees and the elected representatives begin to engage, plan and execute comprehensive school development and improvement plans including involvement in improving student learning, the system begins to respond positively in addressing several issues. An ELP should include a strong strategy for community mobilization and active engagement around issue of children’s learning.
8.2 Strategies for Community Engagement

Some prerequisites for active community engagement:
• Regular communication between the school and the community
• Schools responding to the feedback from the community
• Schools offering meaningful opportunities for parents and community members to participate in school activities.

i. Some suggestive activities:

• Regular parent-teacher meetings, especially after the summative assessments to share the progress made by the child (e.g., Bodh, Room to Read, CARE)
• Special events like reading or maths melas; school-level exhibitions and annual functions, book fairs, story festivals (e.g., Organization for Early Literacy Programme-OELP) during which children read or enact stories to community members
• Community members participate in story telling for children in the classroom
• Parents and community members are able to access story books from the school libraries to read themselves and also read to their children (Aga Khan Foundation)
• Story writing workshops with community members, collecting local folktales and cultural resources (MLE Programme, Government of Odisha)
• Schools can share some worksheets or simple activities that parents can do with their children to assess their learning (Pratham)
• Workshops with parents to actively engage with their child for learning (Saarthihttp://saarthieducation.org/).

8.3 Major Recommendations for Community Engagement

i. Interactions with parents and community should be held before implementing ELP to inform them about the initiative and what they should expect will change in the classroom process and children’s learning and their role in supporting ELP. There should be ongoing communication during ELP implementation in order to keep them informed and also hear feedback.

ii. Information around learning outcomes or expectation from children should be widely disseminated among parents and community members in very simple language.

iii. Information about children’s learning levels and plans made by the school to improve them should be shared in SMC meetings and with parents.

iv. Organizing events for engaging parents in school-level activities, showcasing the work done by the school and the learning levels of children.

v. Schools to share with parents, simple activities or steps that can be taken at home to be involved with the learning of their children in literacy and mathematics.

8.3.1 Case Studies

a. Case study Pratham (Using assessment data for collective action)

Pratham using its ASER survey results conducts meetings with rural communities to identify a road map for improving the learning levels of children. Through these meetings they identify local youth volunteers who support children before or after school hours by conducting activities to promote learning. Pratham has also used the mobile phone technology to share simple activities with mothers that they can do with their children. This helps the mother in understanding how much her child has learnt or is able to do.
b. Case study Prajayatna, Karnataka (Shikshana Gram Sabha)

Gram sabha meetings are organized at the village level, where parents, teachers, SDMCs (Bal Vikas Samithi - for Anganwadi, School Development and Monitoring Committees), gram panchayat members, youth and women’s groups and other interested individuals, participate and discuss the quality of their anganwadi/schools. The information from the Local Education Governance Data is presented and verified in these meetings. Issues identified in the anganwadi/school are prioritized and plans are made, ensuring mutual accountability among all stakeholders. The Shikshshana Gram Sabhas at the school level are followed up with meetings at the gram panchayat level and later at the taluk level. This network meeting builds and enables a collective vision wherein the plans and implementation processes are shared and reviewed.

c. Case study Saarthi (capacity building of parents for improving parental involvement)

Saarthi is an NGO in Delhi that has started to work with parents with low levels of education, living in slums in Delhi. They provide parents with easy-to-do activities; these activities are around supporting children with their academics (literacy and numeracy), general parenting and activities for building socio-emotional skills of children. In addition to building the capability of parents through these activities, Saarthi also focuses on building their awareness and motivation through personal sessions and information regarding their role and responsibilities as a parent.
Chapter 9

Academic Support, Monitoring and Supervision
The academic support structures at the cluster and block level (CRC and BRC) were created to provide academic support to schools and teachers through school visits and regular meetings of teachers. However, the current practice of short-term deputations of teachers, appointment of contractual staff and the increasing number of vacancies in these positions and the huge workload of data collection and other administrative tasks has weakened the monitoring and academic support to the schools. In some states, these full-time resource person positions have been abolished.

Under the ICDS programme, the monitoring and supervision duties are the responsibility of the supervisors and the Child Development Project Officer (CDPO). The focus largely is on data collection and administrative work of the AWC. In case of the pre-school programme, data regarding attendance of children, availability of pre-school education kits and the number of children who transition from the AWC to the formal school is monitored. Specific focus on monitoring and supporting the AWW’s to improve the quality of pre-school programme activities requires specific expertise.

9.1 Role of academic support and monitoring

Any new learning enhancement initiative like ELP that aims at changing teaching practices in the classroom requires a strong mechanism for academic support to teachers, especially during the initial stages of the programme.

9.1.1 The main functions of monitoring and academic support include the following:

- School visits including classroom observations, at least once a month
- Demonstration lessons by the visiting resource person
- Holding meetings with teachers for a cluster of schools to reinforce ELP practices, plan for lessons for coming months, and demonstrate good practices in activities and use of materials
- Reinforce good practices by appreciating teachers and sharing with other teachers
- Collect feedback on the different activities and materials to help in revision of the strategy. This is also important to keep developing and contextualizing the programme and its various components
- Assessing students during school visits and keeping track of progress in student learning
- Support teachers in taking corrective action based on regular assessments and devise strategies for supporting the weakest students
- Collecting data on outputs and outcome indicators as per the programme logframe
- Classifying schools based on the performance on the programme strategy. Providing more time and attention to schools doing poorly
- Work as a coach or mentor for the teachers.

9.1.2 Academic resource persons to support ELP

In the initial phase of implementation of a new ELP, there should ideally be one academic support person (ARP) for 8-10 schools. Incase the state government has a partnership with a technical support agency, they could be asked to add to the existing ARPs, viz CRC and BRPs. Such resource persons from the technical support agency could mentor the existing resource persons at cluster and block level. Pratham in West Bengal and Room to Read in
Chhattisgarh have provided additional staff for monitoring and supervision and mentoring the Shikha Bandhus and CRCs respectively. This additional support can be withdrawn once the programme stabilizes in the schools.

Alternatively, in situations when adequate staff is not available for academic support, a pool of expert teachers at the cluster/block and district level could be created who could take responsibility for supporting teachers from the nearby schools. These teachers would require additional training beyond that provided to all teachers.

As the programme implementation progresses, academic support persons can extend support to teachers through Professional Learning Communities on specific themes or through use of social media tools like WhatsApp.

When anganwadi centres are co-located within the school premises, the head teacher of the primary school can be designated to provide academic support to the AWW on a regular basis. The AWW along with the teachers teaching early primary classes could collectively plan activities for children.

9.2 Capacity building of ARP

ARPs should develop a good understanding and conviction about ELP and its strategies.

i. Training: ARP should receive additional training on ELP concepts and practice and additional resource materials beyond the training for teachers. Professional development of ARP must be on an ongoing basis. Follow-up training programmes of ARP could focus on developing a deeper understanding around specific components of language and literacy and mathematics, e.g. emergent literacy, comprehension strategies, data handling, measurement, learning assessments, etc. This will enable them to support teachers and in suggesting ideas for specific issues.

ii. Resources: ARP must be provided tools like a detailed handout on their role and responsibilities under ELP, classroom observation checklists, detailed instructional plan, activity booklets and handouts, copy of the teacher handbook and the training modules. ARPs should receive additional resources on their phone and in print on a regular basis.

iii. Reflection and planning: ARPs should meet regularly to review and reflect on programme implementation, and prepare to support teachers on practical challenges in ELP implementation.

iv. Classroom practice: ARPs should themselves try out different strategies and activities with children in multi-grade and multilevel situations.

v. Professional development courses and online resources: ARP at cluster, block, DIET and SCERT could enrol in long-term capacity-building programmes for a deeper understanding of language, and literacy and mathematics. Language and Learning Foundation offers a long term (9 month) blended course on early language and literacy and other shorter.
Indira Gandhi National Open University offers a diploma programme for teachers teaching mathematics in primary grades. There are a variety of open educational resources that are now available on public platforms like the NROER of NCERT and the National Teacher Platform of NCTE that can be accessed for upgrading knowledge and learn from existing practices in government schools in the country.

vi. **School inspectors:** Some states still have a small cadre of school inspectors (very inadequate numbers) who are expected to conduct the administrative monitoring and supervision of schools. Such school inspectors should also be oriented about ELP and its implementation. This will ensure consistent messaging to the teacher and the schools regarding ELP.
Chapter 10

Research, Evaluation and Documentation
Research, documentation and evaluation are important aspects for any quality improvement programme as they provide understanding about functioning of the programme, evidence of the changes that come about due to programme implementation and generate a body of knowledge based on which future policy and programmes can be framed.

10.1 Need for Research

Globally, ELP focussed on emergent literacy, foundational language and literacy, and early mathematics have been an area of intensive research for several years now. Countries that have developed frameworks for ELP, based on an extensive review of research on different aspects of early learning. Many of the early learning programmes currently implemented have developed their approach and design based on the vast body of international research.

Two recently launched studies that have focussed on different aspects of early learning in India make strong policy recommendations for early learning programmes in the country. The IECEI, 2017\(^1\) is a longitudinal study covering nearly 14,000 children from the age of 4 years to 8 years, across three states in India; the LiRIL 2017\(^2\) study looks at literacy acquisition in Marathi and Kannada among children studying in early primary classes in government schools.

Given the very diverse contexts in India, where there are many languages and scripts, each state has the flexibility to design its own curriculum and textbooks. Children are taught through different mediums of instruction; there is varied access to quality pre-school education; varied home literacy environments and experiences, home languages that may not be taught at school, multi-grade teaching and multilevel learning situations, varied class sizes, etc. Much needs to be learnt and understood about how children learn in these different contexts; what works and what is required to be done or how should curriculum be organized for ensuring foundational learning among young children. This requires comprehensive research to be undertaken. However, there is also a need for more local and context-specific research in different languages and different school situations by practitioners. The focus should be on simple research that can be carried out by people involved with design and implementation of ELP at SCERT/DIETs/SSA with support from universities and other institutions.

10.1.1 Role of research in ELP

a. Before developing an instructional design, it is essential that a comprehensive understanding of the current situation is developed through simple studies. This is outlined in Section 11.1 (iv).

Apart from designing the programme, the findings from these situation analysis studies and surveys can be disseminated to raise awareness about the need and importance of focussing on foundational learning, among different stakeholders.

b. Small, specific studies could be designed to understand the different aspects of the programme, such as extent of teacher adoption; use and suitability of different teaching learning material; support from parents and community; use of children’s languages, etc.

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c. School-based assessment data could be used for local analysis to identify children who are not progressing well and plan some corrective action.

d. Classroom observations by resource persons and action research by teachers will help ensure that the programme is dynamic and responsive to the field situation. A programme which is modified and updated based on feedback and insights has a better chance of being adopted by teachers rather than a blueprint type model that does not respond to any feedback.

Findings and learning from the research studies must be disseminated widely to teachers, academic persons, and other stakeholders in the system as well as to community members.

10.2 Evaluation for ELP

An ELP should also plan to evaluate the nature of impact of the programme. The outcomes defined for ELP in the Programme Framework presented in Appendix 1 (Improved Teaching – Learning process for ELL and EM) can become the basis for a Theory of Change (ToC) of an evaluation. It is important that a rigorous evaluation is carried out at least once in the early stages of the programme to ensure it is on the right track to achieving the desired impacts. Some practical issues relating to the evaluation design are given below:

i. Apart from change in student learning outcomes, changes in teaching-learning process should also be evaluated. An improved teaching-learning process (along identified key dimensions, e.g. active engagement of children, adequate oral language work, reading practice for children, scope for composition in writing) helps ensure sustained learning improvement. For this purpose, measurable indicators should be developed for key components of the ELL and EM teaching-learning process.

ii. For student learning outcomes, a good assessment instrument should be developed for key competencies for a specific class. It should also include test items that relate to competencies that are more basic and relate to a previous stage or class. This is important to ensure that the assessment is able to analyse what children can do in addition to what they are unable to do, since many children’s learning levels are much below the grade level.

iii. A rigorous impact evaluation should be designed in a manner which can establish the extent to which changes in children’s learning levels were caused by the ELP. Data on children’s learning outcomes should be collected before the intervention starts (baseline data) to establish children’s learning levels before the ELP intervention started, and after two-three-years (endline data) to assess the impact of the programme by comparing children’s learning outcomes in control and intervention groups, both before and after the intervention. A simple comparison of baseline and endline assessment scores before and after the intervention in the schools where ELP is being implemented is not a desirable approach because children would, in any case, independent of the ELP intervention have reached improved learning levels over the course of 2-3 years of teaching and learning.

iv. Evaluation should be conducted in a representative sample of schools that are selected systematically, using a complete sampling frame. Census assessments are not required nor appropriate for evaluating outcomes of a programme.
v. While the baseline data for the evaluation should be collected before the start of the ELP, it is important to wait 2-3 years before collecting endline data to allow the programme to mature and its effects be large enough to be picked up by the evaluation. Endline data collection could be initiated after the second year of implementation.

vi. Similarly, the comparison of teaching-learning process through classroom observations should be carried out between randomly selected set of control and intervention schools to understand the nature and extent of change in the intervention schools.

vii. Qualitative process evaluations, which include interviews and focus groups with teacher and other key stakeholders’, classroom observations, etc. should also form part of the evaluation plan as they assist with identifying bottlenecks to the smooth implementation of the program and provide an in-depth look into the experiences of children and other stakeholders. Qualitative studies, if done well, offer insights into the major factors or components that have helped promote change in the teaching-learning process and student learning.

10.3 Documentation of ELP

In order to capture the changes due to the implementation of the programme, documentation of the various processes and practices must be done simultaneously. This documentation could include video documentation of, classrooms of teachers adopting good practices; training programmes; follow-up meetings of teachers; academic resource persons demonstrating different activities; meetings with parents and community members; interviews with children, parents and teachers. These could be used as resources for teacher professional development and raising awareness. While documenting the successes of the programme, it is also important to record what did not work and why.
Planning and Management of Implementation of ELP
Effective planning and quality implementation (being as close to the design planned) is key to achieving the outcomes desired under ELP. In this Chapter, the preparatory stage (before implementation begins) is outlined in some detail. The other aspects of instructional design, teacher professional development, teaching-learning materials and academic support have been outlined in earlier Chapters. Included here are two frameworks:

1. Illustrative outcomes and activities for an ELP (Appendix-I)
2. Illustrative planning and implementation tool (template) for the first two years (Appendix-II)

### 11.1 Preparatory Phase

#### i. Programme vision and framework

At the beginning, a clear vision of expected outcomes from the ELP should be defined. These would form the basis of the development of the academic component of the programme including the instructional design. The final outcome could be stated in terms of expected improvement in student learning at the end of Class 3 and some intermediate milestones. It is also important to state clearly the expected outcomes on the following dimensions:

- Improved teaching-learning process for ELL and EM
- Increased system capacity and support to ELP
- Increased family and community engagement for ELP objectives.

An illustrative framework for these outcomes along with the major inputs/activities for ELP and essential enabling conditions are listed in Appendix I. It is useful to develop a log frame that lists indicators for each of the outcomes for periodic monitoring and evaluation of progress. Indicators chosen for the outcomes should be specific and measurable, e.g., percentage of students who can read simple words; percentage of students at the end of Class 2 who can read a simple text at 45 words per minute; percentage of students who are able to solve a problem using simple operations; percentage of students who have developed print awareness; percentage of classrooms that have the minimum required TLM and children’s storybooks, etc.

### Illustration of how districts and schools can be phased*

<table>
<thead>
<tr>
<th></th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
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<tbody>
<tr>
<td>Phase 1</td>
<td>X schools (pre-school and Class 1)</td>
<td>X schools (Class 2)</td>
<td>X schools (Class 3)</td>
<td>X schools (Pre-school to Class 3)</td>
<td>X schools</td>
</tr>
<tr>
<td>Phase 2</td>
<td>Y Schools (pre-school and Class 1)</td>
<td>Y Schools Class 2</td>
<td>Y Schools (Pre-school to Class 3)</td>
<td>Y Schools</td>
<td></td>
</tr>
<tr>
<td>Phase 3</td>
<td>Z schools (pre-school and Class 1)</td>
<td>Z schools Class 2</td>
<td>Z schools (Pre-school to Class 3)</td>
<td>Z schools</td>
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</tr>
<tr>
<td>Total</td>
<td>X</td>
<td>X+Y</td>
<td>X+Y+Z</td>
<td>X+Y+Z</td>
<td>X+Y+Z</td>
</tr>
<tr>
<td>Schools with a specific HL-SL approach</td>
<td>Academic planning-materials, training</td>
<td>200 (Class 1)</td>
<td>200 (Class 1 and 2)</td>
<td>200 (Class 1-3)</td>
<td>200 (Class 1-3)</td>
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<tr>
<td></td>
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<td>400 (Class 1)</td>
<td>400 Class (1-2)</td>
<td>400 (Class 1-3)</td>
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<td>800 (Class 1)</td>
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*Year 1 is the preparatory year
A strong preparatory phase of at least 12-15 months is needed to plan and prepare well for implementation. A list of illustrative preparatory activities before ELP launch can be seen in the Appendix II. It may be noted that the instructional design, materials, teachers’ handbook and training design could be different for ELL depending on the situation analysis, especially the home and school language situation.

ii. Some important initial decisions are needed
Certain decisions that are required to be taken at the initial stage include:

- **Which classes to include in the first-year implementation?** It may be best to begin with pre-school (or one year of pre-school) and Class 1 in the first year (after the preparatory phase). A phased introduction (class-wise) helps teachers adopt it in a gradual manner. However, a multi-grade situation may require introduction of ELP for more than one class (say Class 1 and 2) at a time.

- **What should be the approach in multi-grade teaching situation in small schools and schools with one teacher teaching grades 1 and 2?** It may not be appropriate to plan sequentially (first Class 1, then Class 2) when children of 2 or more classes sit together and the same teacher teaches them. One option is to separate out language teaching time for Class 1 and Class 2 (60 minutes each) when the teacher is focussed on children of a particular class at one time. However, given that multilevel learning is common, it is more useful to create an instructional design that can address needs of children in both classes (1 and 2).

- **What should be the geographic phasing (initial phase and expansion) over the years?** Programme scale up is best done in a phase-wise manner beginning with a few districts (or blocks within districts) and new districts added in next phases. For example, in the first year, for ELL, districts or regions where the home language-school language difference is not too much, or children have a reasonable understanding of the school language when they join school could be taken up. During this time, the approach and instructional design, materials and training for different language situations could be developed for starting work from Year 2 or 3.

- **Should ELL and EM programmes be implemented together?** This would depend on system capacity and the additional burden for teachers.

- **How will alignment of pre-school and primary school be achieved for curriculum, expected outcomes, materials and training?** Several options of how alignment, convergence or even integration can be achieved have been discussed in Section 3.1. This will require policy decisions and implementation time. In the interim, alignment of curriculum between the last year of pre-school (ages 4+ to 5+) and Class 1 should be worked out and these two classes (last year of pre-school and Class 1) can be taken up together for introduction of ELP in Year 1 to help convergent planning. In case, such alignment cannot happen immediately due to structural issues (different departments and agencies), a school readiness phase of 6-8 weeks should be introduced at the beginning of Class 1 to support development of emergent literacy skills and developing oral language (ELL) and for developing pre-maths and number concepts.

- **What approach/strategies can be included for addressing the difference in home and school languages based on initial situation analysis?** Some broad approaches have been mentioned in Section 4.2. The approach and strategies should be based on a good understanding of the linguistic situations in different regions.
iii. Clear role definition at all levels

Clear responsibilities need to be identified and notified for different agencies at the state level (SCERT, SSA, Directorate of Education, etc.) and district and sub-district level (DIET, DEO office, BEOs, BRCs) for academic tasks and implementation.

If the state agencies like SCERT/SSA do not have adequate experience of developing an instructional design and other elements of an ELP, it is best to work with one or more technical agencies in the preparatory phase and for support in the early years programme implementation. Ideally, an MOU can be signed for a 2-3 year period for a clearly defined scope of collaboration which may include capacity building of state and district teams, work on instructional design and materials, assessment, training design academic support strategy, etc. The objective should be that in a few years’ time, the state system at different levels (SCERT to CRC) is able to take on the roles of the technical agency.

iv. Situation analysis prior to programme development:

The instructional design development should be based on a situational analysis. This analysis should look at classroom teaching practices including assessment, review of textbooks and curriculum; check availability of teaching learning material in schools; understand teacher attitudes and beliefs around early learning; findings from learning assessment of students in early primary classes; and also collect feedback from the stakeholders in the education system. The situational analysis should also include a mapping of languages spoken by children in their homes and communities as this has a strong bearing on the language and literacy programme design. The situational analysis could be conducted by the technical support agency.

A list of survey instruments used by LLF for situation analysis for designing an ELP is:
- Classroom observation tool (for classes 1 to 3)
- Teacher interview
- Time-on-task tool
- Student assessment (for classes 2 and 3)
- Survey questionnaire for teachers
- Children’s writing (notebook) samples
- Focus Group discussions with CRC/BRP
- Interview with BRC/BEO
- Textbook analysis

v. Capacity building of state and district teams

It is important to identify a strong state level resource group (with members from SCERT/ DIETs, block/cluster level and good teachers) of about 25 to 30 persons for ELL and EM, separately. A comprehensive plan for capacity building of SRG should be initiated from the preparatory phase for conceptual understanding and practice in ELL and EM. Similarly, district resource group (DRG) should be formed in districts where implementation is planned, and their orientation should be initiated well in advance.

vi. Mobilization around ELP

Based on student assessment results and initial findings of situation analysis, a social mobilization effort can be launched to reach out to teacher unions, teachers, head teachers, SMCs and parents to develop a shared understanding of the current problems in early learning
and directions of change that are desirable. This way, when the programme is launched there would already be some readiness and acceptance of the proposed changes in teaching-learning process and other aspects.

This could also be the basis for district and sub-district level agreements between all stakeholders of the school system, viz. parents, community, school management committees, the school, teachers, teacher associations, officials of the education department, panchayats and other elected representatives, to actively work towards bringing about the desired change.

School-level agreements with academic support team need to be built in order to hold each other accountable and also extend support. These commitments could be around timely provisioning of textbooks and other teaching-learning materials; teachers committing to adopting new teaching-learning practices in their classrooms; academic support teams to regularly visit schools and support teachers in addressing the challenges they face; parents to ensure regularity of attendance of their children and to provide time for study at home.

11.2 Early implementation

i. **Regular school visit:** During the early stages of implementation of the programme, the resource group members, and members of the technical support agency (if any) should undertake regular school visit to observe classrooms, talk to teachers, interact with children and collect feedback. Specific feedback should be taken on the teaching-learning material and activities as these must be trialled in the classroom before finalization. This is also important to understand problems and challenges for designing the next round of training and making changes in materials, etc.

ii. **Demonstration school:** Developing demonstration schools in each district/block with the involvement and support from the change makers or leaders of practice from within the system, helps in validation of the programme EGRAN, Government of West Bengal; Room to Read. These schools become exemplars or models for other schools as they help in expansion of the programme, motivating teachers to adopt the classroom practices promoted for early learning. During teacher professional development programmes, visits should be organized to the demonstration schools. Twinning arrangements can be made between demonstration schools and the schools where the programme is launched.

iii. **Teaching-learning material:** The essential teaching-learning material for the programme should be centrally designed and supplied to schools by the department, in order to have durable materials across all schools available in adequate numbers for use by children. This includes a set of children’s graded storybooks for beginning and early readers, for all classrooms. Additional materials can be developed and prepared in local contexts during workshops, cluster meetings or individually by teachers based on some guidance.

iv. **Regular academic support:** Academic support for teachers, especially during the early stages of implementation, helps them in adopting new practices in their classrooms. CRCs are best suited to support teachers through school visits, regular meetings and by sharing resources (in print and multimedia resources on smartphones). Where full-time CRCs are not available, arrangements should be put in place for some visits and meetings by block level resource persons for language and mathematics.
v. **Continuous professional development of resource persons:** Continuous professional development opportunities should be available for members of resource groups for specialized themes like textbook development, assessment, children’s reading material development, etc. to help develop a deeper understanding of specific themes. Many such opportunities could be in the blended mode with scope for self-learning.

vi. **Dynamic, evolving programme design:** The programme design needs to be dynamic and responsive to the field situation. Several existing programmes have been making necessary revisions to the instructional design and teaching-learning material based on classroom observations, feedback from teachers, students learning assessments, feedback during review meetings of teachers and resource persons, monitoring data, and research studies.

Research and evaluation of programmes should be a part of the ELP design for which arrangements and agreements with appropriate institutions should be made even before launch of the ELP.
Chapter 12

Systemic Enabling Conditions and Actions
Overall Recommendations

i. Long-term commitment to ELP

The state government (including SSA and SCERT and Directorate of Education) should make a long-term commitment to implement and support early learning programmes for all children. This would be based on an understanding that the foundational years (3-8 or pre-school to grade 3) are the most crucial and the cognitive development (ELL and EM) forms the basis of all future learning.

Several good programmes in many states have not been successful because there was lack of consistency in approach and newer programmes were initiated without giving adequate time and comprehensive support for the earlier programmes to succeed. As discussed earlier, a 3-5 year roadmap should be developed based on a clear vision of the change expected to be seen in the teaching-learning process and children’s learning outcomes. Sustained support from the state government to ELP is a prerequisite for success.

ii. Role clarity and assigning of clear responsibilities:

In several states, SSA, SCERT and the Directorate of Primary/Elementary education do not work in a coordinated, synergistic manner with clear roles and responsibilities for a common programme. They have often pursued different priorities. This lack of coordination is reflected at the district and sub-district levels too. The DIET, BRC and CRC do not work together on academic issues. The mainstream education system (DEO, BEO and school supervisors) may not be working closely with SSA structures. For ELP, roles should be defined very clearly for each agency from the state level downwards. Institutions like SCERT and DIETs must be integrally involved in the ELP from the beginning.

iii. Aligning/converging/integrating pre-school and early primary classes

- The official policy for age of entry into formal school is 6 years; several states continue to enrol children at the age of 5 years. Starting formal schooling early is developmentally inappropriate and can lead to sub-par learning outcomes in primary classes. States need to revisit the age of entry and ensure that children start formal schooling at the age of 6.

- Different research studies (IECEI, 2017; ASER 2014) have pointed out that a large number of underage children are attending Class 1. Attaching pre-primary sections (one year of kindergarten) to government primary schools could help in ensuring that that 4 and 5-year-old children get developmentally appropriate education.

- Early learning years from age 3-8-years are a continuum of foundational learning for children. The curriculum for the foundational years needs to be developmentally appropriate and flexible. Curriculum developers need to ensure a linkage and harmonization in the curriculum for pre-school in the anganwadis and the school curriculum for classes 1 to 3. In case where schools have pre-primary sections the curriculum and teaching from pre-primary to Class 3 should be planned in a continuum.

The different ways in which this is happening in some states at present was discussed in Section 3.1. This requires policy initiatives at the central and state government levels, across departments and agencies. At the minimum, the last year of pre-school should get aligned at the earliest with primary school. The SCERT could take responsibility for developing the
curriculum and instructional design, materials and training programmes for the one year of pre-primary along with the early primary classes.

iv. Adequate teachers in schools

Depending on the enrolment there should at least be two dedicated teachers for pre-school to Class 3. These teachers should receive specific training for teaching young children.

v. Focus on early learning in pre-service teacher education

Special courses for teaching children in classes K to 3 should be included during pre-service teacher training programmes, including specific papers / courses for early language and literacy, and mathematics as part of the D.El.Ed programme. For this intensive orientation of teacher educators will be necessary along with preparing suitable course material.

vi. Adequate budgets for ELP

Implementing ELP would require adequate annual budgets from the state government as well as SSA and Teacher Education (TE). Integrated planning is needed to optimize availability of funds for ELP. Instead of developing annual plans, the state should develop a 3-5-year plan and propose it central and state funding.

vii. Funds for children's storybooks and TLM

Despite years of funding under SSA and ICDS, many primary schools and AWCs do not have adequate and appropriately graded storybooks for children. This must be taken up as a campaign. In many other countries campaigns like Operation Book Flood have ensured that each school has classroom libraries with simple, interesting and colourful reading materials for children. Providing adequate children's storybooks will be the single biggest positive contribution for improving children’s literacy in early primary classes. In addition other instructional materials, like letter and word cards, grids, reading cards, puzzles, board games, dice, ganitmala, etc. should be available in every early grade classroom in adequate number of sets for use by children. Issues of procurement from single source (for books and materials) should be addressed so that the best books and materials can be selected and purchased.

viii. Agreements with technical support agencies

State governments should identify competent technical agencies and enter into (at least) 3-year agreements with them for supporting certain technical aspects of the ELL and EM. It is important that states develop some guiding principles (like the ones suggested in this document) and non-negotiables that should form the basis for agreements with NGOs and institutions.

ix. Increased instructional time for language teaching

The MHRD document, Padhe Bharat Badhe Bharat emphasizes at least 2-2.5 hours for language in the early primary classes. Several researches have shown the importance of adequate instructional time for language and literacy from K to 3 to build a strong foundation for academic learning in later classes. There should be a minimum of 2 periods (80-90 minutes) a day for language teaching-learning from pre-school to Class 3 for the school language. An ELL programme will not succeed in achieving desired outcomes if this cannot be ensured.
x. Creating an environment in the education system of accountability for equitable student learning

This will help focus on the learning outcomes, and most importantly on all children learning. The focus should be on ensuring that children who are falling behind in learning get extra attention and support in class on a regular basis. The message of equity has to be internalized in the system adequately.

xi. Improving regular assessment mechanism to support ELP

The regular system of school-based assessment should be improved to align with ELP objectives and learning outcomes. The focus should be on school-based assessment and follow-up to improve student learning rather than collecting assessment results and transmitting them upwards for further analysis at district and state level.

xii. Language-in-education policy or framework

A policy or framework will be needed suggesting approaches for the different language situations in different regions of the state. In certain situations, use of children’s home language as the medium of instruction for the first few years of primary school (and including pre-school) will be the most appropriate approach. This requires development of curriculum, materials and training programmes in these languages, as also ensuring availability of teachers with specific language backgrounds in these schools.

This policy initiative will need to come from the state government (not just from SSA or SCERT) and will require social mobilization and consensus building. This will also require partnership with other organizations that have worked on issues of home and school language.

xiii. Textbook revision for early primary classes

It is clear from the experience of several programmes, researches like LiRIL and textbook analyses conducted that textbooks of language and mathematics in several states will need to be significantly revised and aligned to ELL and EM approaches and strategies. ELP would also provide feedback about what kind of changes are needed in the textbooks. Members of the SRG (including SCERT faculty) working on design of ELP should also contribute to the textbook revision process.

For ELL, the textbook cannot be the only resource for oral work, reading and writing activities. A collection of children’s reading materials will have to be available in every classroom and included as a part of the teaching-learning process.
Chapter 13

Appendix

1. Programme Framework
2. Planning and Management Tool
### Appendix–I

**Programme Framework: Major Inputs and Outcomes (illustrative) for ELP**

<table>
<thead>
<tr>
<th><strong>FINAL OUTCOMES</strong></th>
<th><strong>INTERMEDIATE OUTCOMES</strong></th>
<th><strong>Increased community and family support</strong></th>
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</thead>
<tbody>
<tr>
<td>• Most students achieve expected learning outcomes in Language and Literacy, and Mathematics by the end of Class 3 and show good progress in defined milestones in other classes</td>
<td>Increased teaching-learning process for ELL and EM</td>
<td>• Increased awareness of importance of foundational learning in language and maths</td>
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<tr>
<td><strong>Long term</strong></td>
<td></td>
<td>• Increased interest in children’s learning progress</td>
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<tr>
<td>• Students develop a positive attitude towards mathematics and how to use mathematics in their everyday lives.</td>
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<td>• Increased support for learning in the home environment</td>
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<td>• Students develop an increased interest in reading books and develop a habit of reading</td>
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<tr>
<td><strong>IMPROVED TEACHING-LEARNING PROCESS FOR ELL AND EM</strong></td>
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<tr>
<td>• Increased teacher capacity and effectiveness to teach language and literacy and mathematics</td>
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<tr>
<td>• Teachers follow the suggested instructional design and principles and strategies for different components of ELL and EM</td>
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<tr>
<td>• Increased access to and use of instructional materials (TLM) like varna cards, grids, reading cards, books, ganitmala</td>
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<tr>
<td>• Adequate instructional time for language and literacy, and mathematics</td>
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<tr>
<td>• Print-rich environment in classrooms including children’s literature</td>
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<tr>
<td>• Students actively engaged in learning activities (high time-on-task)</td>
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<td>• Frequent assessment and its use to improve learning</td>
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<tr>
<td>• Focus on learning of all students and targeted attention to low achieving students</td>
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<tr>
<td><strong>INCREASED SYSTEM CAPACITY &amp; SUPPORT TO ELP</strong></td>
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<tr>
<td>Increased understanding within the system of importance of foundational language and literacy, and mathematics and the learning continuum from preschool to Class 3 principles and conceptual understanding of ELL and EM</td>
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<tr>
<td>Develop capacity of school leaders and in areas of language and literacy, and mathematics in early years.</td>
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<tr>
<td>Improved academic support, supervision and monitoring at cluster, block and district levels</td>
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<td>Strong ELL and EM resource groups at state level to develop curriculum, instructional design and materials and training programmes and respond to feedback from the field</td>
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### MAJOR INPUTS/PARTS for ELP

<table>
<thead>
<tr>
<th>Instructional design</th>
<th>Material development, production &amp; distribution</th>
<th>Teachers’ professional development</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Clear learning milestones</td>
<td>• Instructional materials including cards, games, posters and children’s graded reading materials and books. TLM for teaching of mathematics</td>
<td>• Initial and refresher trainings</td>
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<tr>
<td>• Systematic teaching-learning sequence</td>
<td>• Additional books for classroom/school libraries</td>
<td>• Developing some schools as demonstration sites</td>
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<tr>
<td>• Regular assessments at the school level</td>
<td>• Print-rich classrooms including reading and maths corners</td>
<td>• Regular academic support</td>
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<tr>
<td>• Appropriate teaching strategies, activities and assessment</td>
<td></td>
<td>• Multiple strategies for continuous professional development, e.g. professional learning communities, self-learning resources, WhatsApp groups, audio-video materials on phone</td>
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<tr>
<td>• Focus on identified skills in language and literacy, and mathematics</td>
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<tr>
<td>• Scaffolding, revision and support to weaker students</td>
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<tr>
<td>• Simple teachers’ guide</td>
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</table>

### ENABLING CONDITIONS

- A long-term vision focussing on early learning from pre-school to Class 3
- Adopting models for integrating/aligning pre-school with early primary school classes
- Increased instructional time for Language teaching
- Ensuring RTE norms for each school
- Regular functioning of schools and teacher attendance
- Creating an environment in the education system of accountability for student learning
- Priority & strong sustained support for ELP at all levels of government
- Creating effective partnerships for supporting ELP
- Social mobilization on language-in-education issues and including children’s languages in ELP
- Changes in the early primary class textbooks
- Adequate budgets for TLM and children’s books
<table>
<thead>
<tr>
<th>Regular assessment, monitoring &amp; evaluation &amp; research</th>
<th>Capacity building of state &amp; district institutions for ELP development &amp; implementation</th>
<th>Community &amp; family engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Assessments during monitoring visits</td>
<td>• Creation of dedicated teams at state and district levels and their intensive training/orientation on an ongoing basis</td>
<td>• PTA meetings for sharing students’ progress</td>
</tr>
<tr>
<td>• Programme implementation review at district and state level</td>
<td>• Strengthening SCERT and DIET capacity for ELL and EM</td>
<td>• Organizing events like story mela, maths mela at school and community level</td>
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<tr>
<td>• Regular feedback from the field and necessary changes in programme and instruction design</td>
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<td>• Workshops with parents to ensure support at home for learning</td>
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<td>• Review of textbooks based on experience of the programme</td>
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<tr>
<td>• Evaluation to assess impact on learning outcomes including children at the lower end of the class</td>
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<td>• Video documentation of teacher adoption and good practices</td>
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## Planning and Management Tool

<table>
<thead>
<tr>
<th>Year</th>
<th>Stage-wise Planning Tool</th>
<th>Responsible Agency</th>
<th>Month 1</th>
<th>Month 2</th>
<th>Month 3</th>
<th>Month 4</th>
<th>Month 5</th>
<th>Month 6</th>
<th>Month 7</th>
<th>Month 8</th>
<th>Month 9</th>
<th>Month 10</th>
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<tr>
<td>Preparatory phase</td>
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<tr>
<td>A</td>
<td>Programme decisions, institutional arrangements and capacity building</td>
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<tr>
<td>1</td>
<td>Creation of management arrangements for Early Learning Programme &amp; partnerships with technical support organizations</td>
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<td>2</td>
<td>Formation of State Resource Group and District Resource Group for ELL and EM</td>
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<td>3</td>
<td>Intensive orientation for SRG/DRG (including SCERT and DIETs) through technical support agency (if available) or other avenues; long-term plan for capacity building worked out</td>
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<td>4</td>
<td>Developing a roadmap for 3 to 5 years for ELP including phased implementation</td>
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<td>5</td>
<td>Issuing of necessary circulars for preparatory work for the programme</td>
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<td>6</td>
<td>Preparation and approval of district, state level plan and budget for ELP</td>
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<td>7</td>
<td>Developing detailed roles and responsibilities of all levels concretely (SCERT, SSA, DIETs, DEO/BRC etc)</td>
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<tr>
<td>Planning and Management of Implementation Tool</td>
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<tr>
<td><strong>Stage-wise Planning Tool</strong></td>
<td><strong>Responsible Agency</strong></td>
<td><strong>Month 1</strong></td>
<td><strong>Month 2</strong></td>
<td><strong>Month 3</strong></td>
<td><strong>Month 4</strong></td>
<td><strong>Month 5</strong></td>
<td><strong>Month 6</strong></td>
<td><strong>Month 7</strong></td>
<td><strong>Month 8</strong></td>
<td><strong>Month 9</strong></td>
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<td>8</td>
<td>Conduct of simple research including situational analysis (classroom processes, assessments, use of textbooks and other teaching-learning material, language used in school and language spoken at home and community and learning assessment of students)</td>
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<td>9</td>
<td>State-wide/ district-wide mobilization on results of situational analysis and learning assessment of children and building consensus about need for change</td>
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<td>10</td>
<td>Final decisions about phasing of implementation (classes and blocks/districts) pilots for ELL for specific HL-SL situations</td>
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**B Development of instructional design (ELL and EM)**

<table>
<thead>
<tr>
<th><strong>Month</strong></th>
<th><strong>Activity</strong></th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Review of current textbooks for Classes 1 to 3 (language and mathematics)</td>
</tr>
<tr>
<td>2</td>
<td>Review of existing pre-school curriculum</td>
</tr>
<tr>
<td>3</td>
<td>Development of instructional design for teaching language/ mathematics for pre-primary and Class 1. Specific design to address Home-school language differences</td>
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<tr>
<td>4</td>
<td>Development of teachers' handbook, activity book, etc.</td>
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<td>Month</td>
<td>Stage-wise Planning Tool</td>
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<tr>
<td>5</td>
<td>Development of Instructional TLM (graded supplementary readers, word cards, letter cards, grids, poem posters, work book, kits for teaching of maths) and select children’s storybooks. Development of new storybooks, if needed for SL and identified HL</td>
</tr>
<tr>
<td>6</td>
<td>Printing and procurement of TLM</td>
</tr>
<tr>
<td>7</td>
<td>Distribution of TLM and textbooks to all project schools</td>
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<tr>
<td>8</td>
<td>Schools set up reading corners / classroom libraries for pre-primary and Class 1</td>
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<tr>
<td>9</td>
<td>Printing of teacher handbook and activity book</td>
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</tbody>
</table>

### Teacher Professional Development (pre-primary and Class 1)

<table>
<thead>
<tr>
<th>Month</th>
<th>Stage-wise Planning Tool</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Development of the 1st phase of training for pre-primary and Class 1 including session plan, detailing out of each session, background materials including audio-video and handouts for the session</td>
</tr>
<tr>
<td>2</td>
<td>Planning of Year 1, Phase 2 training of teachers of pre-primary and Class 1</td>
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<tr>
<td>3</td>
<td>Planning for monthly follow-up meetings with teachers</td>
</tr>
<tr>
<td>4</td>
<td>Training of master trainers</td>
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<tr>
<td>5</td>
<td>Orientation of State, District (Phase 1) and Block level Administrative staff</td>
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<tr>
<td>6</td>
<td>In-depth training of Cluster Resource Centre Coordinators</td>
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<tr>
<td>7</td>
<td>Orientation of school heads on ELP</td>
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<tr>
<td>Year</td>
<td>Stage-wise Planning Tool</td>
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</tr>
<tr>
<td>1</td>
<td>Year 1 Phase 1 - Training of teachers dedicated for pre-primary and Class 1 and distribution of teacher handbook and activity book</td>
</tr>
<tr>
<td>2</td>
<td>Programme launch in Phase 1 schools (preferably coterminous with the start of the academic session)</td>
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<tr>
<td>3</td>
<td>Teacher professional development for pre-primary and Class 1</td>
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<tr>
<td>4</td>
<td>Monthly follow-up meetings of teachers of pre-primary and Class 1 at cluster level (at least 4–6 meetings/year)</td>
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<tr>
<td>5</td>
<td>Forming of WhatsApp groups of teachers at cluster level to share resources and extend support</td>
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<tr>
<td>6</td>
<td>SRG/DRG and D/ET/BRC/CRC visits to schools to understand progress and challenges to decide on further inputs</td>
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<td>Stage-wise Planning Tool</td>
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<tr>
<td>4</td>
<td>Review of the pre-primary and Class 1 teacher training modules</td>
</tr>
<tr>
<td>5</td>
<td>Developing professional learning communities of teachers (subject specific / class specific)</td>
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<td></td>
<td><strong>B</strong>  Teacher professional development for Classes 2 and 3</td>
</tr>
<tr>
<td>1</td>
<td>Development of the 1st phase of training for Classes 2 and 3 including session plan, detailing out of each session, background materials including audio-video and handouts for the session</td>
</tr>
<tr>
<td>2</td>
<td>Planning of second phase of training of teachers of Classes 2 and 3</td>
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<tr>
<td>3</td>
<td>Planning for monthly follow-up meetings with teachers</td>
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<td>4</td>
<td>Training of master trainers for Classes 2 and 3</td>
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<td>5</td>
<td>In-depth training of Cluster Resource Centre Coordinators for Classes 2 and 3</td>
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<td>6</td>
<td>Phase 1 - In-depth training of teachers dedicated for Classes 2 and 3 and distribution of teacher handbook and activity book</td>
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<td></td>
<td><strong>C</strong>  Student learning assessment</td>
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<tr>
<td>1</td>
<td>Develop question banks for teachers to use for classroom based assessment of students learning</td>
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<td>2</td>
<td>Summative assessments of student learning</td>
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## Planning and Management of Implementation Tool

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<th>Stage-wise Planning Tool</th>
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<td>3 Monitoring of students’ learning progress during school visits by academic support personnel</td>
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### D Research, Evaluation and Documentation

1 Documentation of teachers’ adoption of the new instructional approach

2 Documentation of the changing classroom practices

3 Planning, designing and conducting other research studies

### E Academic Support to Teachers

1 Weekly visit to schools by CRCC to provide onsite support to teachers demonstration of instructional activities in the classroom

2 Fortnightly or monthly meetings of CRCC to review programme implementation

3 Cross visits across blocks and districts to observe good practices

### F Community Involvement and Support

1 Orientation of School Management Committee on the ELP programme

2 Dissemination of Learning milestones/outcomes for each class to parents

3 Events at school level to share progress in learning of students
## Planning and Management of Implementation Tool

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<td>4</td>
<td>Story telling festivals, maths mela, book fair, etc.</td>
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<td>5</td>
<td>Environment building regarding the new approach and its goal</td>
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<td>6</td>
<td>Media campaign to generate awareness and showcase best practices</td>
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<td>State, district and block level review meetings for monitoring programme implementation</td>
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<td>2</td>
<td>Revisiting implementation plan and planning for expansion including financial planning</td>
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<td>3</td>
<td>Continued capacity building of SRG/DRG (and SCERT/DIET/BRC/CRC)</td>
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<td><strong>H</strong> Instructional Design pre-primary and Class 1</td>
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<td>Redesigning of instructional package for pre-primary and Class 1</td>
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<td>Revising instruction design handbook, teacher handbook for pre-primary and Class 1, workbook/worksheets as needed</td>
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<td><strong>I</strong> Instructional design for Classes 2 and 3</td>
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<td>Developing TLM for Classes 2 and 3</td>
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<td>3</td>
<td>Initiate ELP in Classes 2 and 3 in Phase 1 schools and start in pre-school and Class 1 in new areas</td>
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<td>3</td>
<td>Developing instructional guidelines, teacher handbook and activity book for Classes 2 and 3</td>
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<td>Printing and procurement of TLM for Classes 2 and 3</td>
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<td>Distribution of TLM and textbooks to all project schools</td>
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<td>Printing of teacher handbook and activity book for Classes 2 and 3</td>
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<td>Setting up of reading corners or classroom libraries for Classes 2 and 3</td>
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<td>Revised instructional design for pre-primary and Class 1 implemented in Phase 1 schools</td>
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<td>Preparatory activities for expansion to new schools / districts</td>
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<td>Endline study in phase 1 schools to assess impact of programme</td>
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