

- 2.1 PRIMACY OF THE ACTIVE LEARNER
- 2.2 LEARNERS IN CONTEXT
- 2.3 DEVELOPMENT AND LEARNING
- 2.4 IMPLICATIONS FOR CURRICULUM AND PRACTICE
- 2.5 KNOWLEDGE AND UNDERSTANDING
- 2.6 RECREATING KNOWLEDGE
- 2.7 CHILDREN'S KNOWLEDGE AND LOCAL KNOWLEDGE
- 2.8 SCHOOL KNOWLEDGE AND THE COMMUNITY
- 2.9 SOME DEVELOPMENTAL CONSIDERATIONS

## CHAPTER 2: LEARNING AND KNOWLEDGE



This chapter establishes the need to recognise the child as a natural learner, and knowledge as the outcome of the child's own activity. In our everyday lives outside the school, we enjoy the curiosity, inventiveness and constant querying of children. They actively engage with the world around them, exploring, responding, inventing and working things out, and making meaning. Childhood is a period of growth and change, involving developing one's physical and mental capacities to the fullest. It involves being socialised into adult society, into acquiring and creating knowledge of the world and oneself in relation to others in order to understand, to act, and to transform. Each new generation inherits the storehouse of culture and knowledge in society by integrating it into one's own web of activities and understanding, and realising its 'fruitfulness' in creating afresh.

### 2.1 PRIMACY OF THE ACTIVE LEARNER

Informal learning in society builds on the learners' natural ability to draw upon and construct their own knowledge, to develop their

capacities, in relating to the environment around them, both physical and social, and to the task at hand. For this to happen, opportunities to try out, manipulate, make mistakes and correct oneself are essential. This is as true of learning language as it is of a craft skill or a discipline. Schools as institutions provide new opportunities for all learners to learn about themselves, others, and society, to access their inheritance and engage with it irrespective of and outside the access provided by one's birth into a family and a community. The formal processes of learning that school makes possible can open up new possibilities of understanding and relating to the world.

Our current concern in curriculum development and reform is to make it an inclusive and meaningful experience for children, along with the effort to move away from a textbook culture. This requires a fundamental change in how we think of learners and the process of learning. Hence the need to engage in detail with the underpinnings and implications of 'child-centred' education.

'Child-centred' pedagogy means giving primacy to children's experiences, their voices, and their active participation. This kind of pedagogy requires us to plan learning in keeping with children's psychological development and interests. The learning plans therefore must respond to physical, cultural and social preferences within the wide diversity of characteristics and needs. Our school pedagogic practices, learning tasks, and the texts we create for learners tend to focus on the socialisation of children and on the 'receptive' features of children's learning. Instead, we need to nurture and build on their active and creative capabilities—their inherent interest in making meaning, in relating to the world in 'real' ways through acting on it and creating, and in relating to other humans. Learning is active and social in its character. Frequently, the notions of 'good

student' that are promoted emphasise obedience to the teacher, moral character, and acceptance of the teacher's words as 'authoritative' knowledge.

## 2.2 LEARNERS IN CONTEXT

Children's voices and experiences do not find expression in the classroom. Often the only voice heard

### *Common sources of physical discomfort*

- *Long walks to school.*
- *Heavy school bags.*
- *Lack of basic infrastructure, including support books for reading and writing.*
- *Badly designed furniture that gives children inadequate back support and cramps their legs and knees.*
- *Time tables that do not give young children enough breaks to stretch, move and play, and that deprive older children of play/sports time, and encourage girls to opt out.*
- *Especially for girls, the absence of toilets and sanitary requirements.*
- *Corporal punishment—beating, awkward physical postures.*

is that of the teacher. When children speak, they are usually only answering the teacher's questions or repeating the teacher's words. They rarely do things, nor do they have opportunities to take initiative. The curriculum must enable children to find their voices, nurture their curiosity—to do things, to ask questions and to pursue investigations, sharing and integrating their experiences with school knowledge—rather than their ability to reproduce textual knowledge. Reorienting the curriculum to this end must be among our highest priorities, informing the preparation of teachers, the annual plans of schools, the design of textbooks,

learning materials and teaching plans, and evaluation and examination patterns.

Children will learn only in an atmosphere where they feel they are valued. Our schools still do not convey this to *all* children. The association of learning with fear, discipline and stress, rather than enjoyment and satisfaction, is detrimental to learning. Our children need to feel that each one of them, their homes, communities, languages and cultures, are valuable as resources for experience to be analysed and enquired into at school; that their diverse capabilities are accepted; that all of them have the ability and the right to learn and to access knowledge and skills; and that adult society regards them as capable of the best. We are becoming more aware of the importance of these needs as our schools expand and increasingly include children from all sections of society. The midday meal and the provisioning of infrastructural support and pedagogic concern for inclusive education are among the most significant developments in recent times. A strong stand must be taken against all forms of corporal punishment. The boundaries of the school need to become more porous to the community. At the same time, the problems of curriculum load and examination-related stress require urgent attention in all their dimensions. Physical and emotional security is the cornerstone for all learning, right from the primary to the secondary school years, and even afterwards.

### 2.3 DEVELOPMENT AND LEARNING

The period from infancy to adolescence is one of rapid growth and change. The curriculum must have a holistic approach to learning and development that is able to see the interconnections and transcend divisions between physical and mental development, and between individual development and interaction with others.

**2.3.1** The precondition for all development is healthy physical growth of all children. This requires that the basic needs in terms of adequate nutrition, physical exercise and other psycho-social needs are addressed. Participation of all children in free play, informal and formal games, yoga and sports activities is essential for their physical and psycho-social development. The range of abilities as a result of games, sports and yoga will improve stamina, fine and gross motor skills and dexterities, self-awareness and control, and coordination in team games. Simple adaptation of playgrounds, equipment and rules can make activities and games accessible to all children in the school. Children can achieve high levels of excellence in sports, athletics, gymnastics, yoga and performing arts such as dance. When the emphasis shifts from enjoyment to achievement, such training can make demands of discipline and practice that can create stress at this stage. Whereas all students must be involved in health and physical education activities, those who choose to excel in games and sports need to be provided adequate opportunities.

Physical development supports mental and cognitive development, especially in young children. The capacity to think, reason and make sense of the self and the world, and to use language, is intimately connected with acting and interacting—doing things by oneself and with others.

**2.3.2** Cognition involves the capacity to make sense of the self and the world, through action and language. Meaningful learning is a generative process of representing and manipulating concrete things and mental representations, rather than storage and retrieval of information. Thinking, language (verbal or sign) and doing things are thus intimately inter-twined. This is a process that begins in infancy, and develops through independent and mediated activities. Initially, children are cognitively oriented to the here and now, able to

*There is a range of schools, both private and government, catering to different socio-economic groups. According to the Kothari Commission: "In a situation of the type we have in India, it is the responsibility of the education system to bring the different social classes and groups together and thus promote the emergence of an egalitarian and integrated society. But at present instead of doing so, the education system itself is tending to increase social segregation and to perpetuate and widen class distinctions. ... What is worse, this segregation is increasing and tending to widen the gulf between the classes and the masses..." (1966:18). Are we telling our children that we value them differently? If the answer is 'Yes', we urgently need to take steps for realising the goal that the Kothari Commission had placed before us by recommending a system of common schools. A common school system can be defined as a national system of education that is founded on the ideals and values of the Constitution of India, and which has the capacity to provide education of a comparable quality to all children in an equitable manner irrespective of their caste, creed, gender, class or location. In such a system, all categories of schools presently in vogue (i.e. government, local body, or private) have the responsibility of providing for basic infrastructural and pedagogic norms and ensuring free education to all children residing in the vicinity of the school.*

reason and act logically on concrete experiences. As their linguistic capabilities and their ability to work in the company of others develop, it opens up possibilities of more complex reasoning in tasks that involve abstraction, planning and dealing with ends that are not in view. There is an overall increase in the capability of working with the hypothetical, and reasoning in the world of the possible.

Conceptual development is thus a continuous process of deepening and enriching connections and acquiring new layers of meaning. Alongside is the

development of theories that children have about the natural and social worlds, including themselves in relation to others, which provide them with explanations for why things are the way they are, the relationships between causes and effects, and the bases for decisions and acting. Attitudes, emotions and morals are thus an integral part of cognitive development, and are linked to the development of language, mental representations, concepts and reasoning. As children's metacognitive capabilities develop, they become more aware of their own beliefs and capable of regulating their own learning.

- All children are naturally motivated to learn and are capable of learning.
- Making meaning and developing the capacity for abstract thinking, reflection and work are the most important aspects of learning.
- Children learn in a variety of ways—through experience, making and doing things, experimentation, reading, discussion, asking, listening, thinking and reflecting, and expressing oneself in speech, movement or writing—both individually and with others. They require opportunities of all these kinds in the course of their development.
- Teaching something before the child is cognitively ready takes away from learning it at a later stage. Children may 'remember' many facts but they may not understand them or be able to relate them to the world around them.
- Learning takes place both within school and outside school. Learning is enriched if the two arenas interact with each other. Art and work provide opportunities for holistic learning that is rich in tacit and aesthetic components. Such experiences are essential for linguistically known things,

especially in moral and ethical matters, to be learnt through direct experience, and integrated into life.

- Learning must be paced so that it allows learners to engage with concepts and deepen understanding, rather than remembering only to forget after examinations. At the same time learning must provide variety and challenge, and be interesting and engaging. Boredom is a sign that the task may have become mechanically repetitive for the child and of little cognitive value.
- Learning can take place with or without mediation. In the case of the latter, the social context and interactions, especially with those who are capable, provide avenues for learners to work at cognitive levels above their own.

**2.3.3** Adolescence is a critical period for the development of self-identity. The process of acquiring a sense of self is linked to physiological changes, and also learning to negotiate the social and psychological demands of being young adults. Responsible handling of issues like independence, intimacy, and peer group dependence are concerns that need to be recognised, and appropriate support be given to cope with them. The physical space of the outside world, one's access to it, and free movement influence construction of the self. This is of special significance in the case of girls, who are often constrained by social conventions to stay indoors. These very conventions promote the opposite stereotype for boys, which associates them with the outdoors and physical process. These stereotypes get especially heightened as a result of biological maturational changes during adolescence. These physiological changes have ramifications in the psychological and social aspects of an adolescent's life. Most adolescents deal with these changes without full knowledge and understanding, which could make them

vulnerable to risky situations like sexually transmitted diseases, sexual abuse, HIV/AIDS and drug and substance abuse.

It is a time when the given and internalised norms and ideas are questioned, while at the same time the opinions of the peer group become very important. It is important to recognise that adolescents need social and emotional support that may require reinforcement of norms of positive behaviour, acquisition of skills essential to cope with the risky situations that they encounter in their lives, manage peer pressure and deal with gender stereotypes. The absence of such support can lead to confusion and misunderstanding about these changes, and affect their academic and extracurricular activities.

**2.3.4** It is important to create an inclusive environment in the classroom for all students, especially those who are at risk of marginalisation, for instance, students with disabilities. Labelling an individual student or a group of students as learning disabled etc. creates a sense of helplessness, inferiority and stigmatisation. It tends to overshadow difficulties that children may be facing in schools due to diverse socio-cultural backgrounds and inappropriate pedagogical approaches being used in the classroom. A student with a disability has an equal right to membership of the same group as all other students. Differences between students must be viewed as resources for supporting learning rather than as a problem. Inclusion in education is one of the components of inclusion in society.

Schools, therefore, have a responsibility of providing a flexible curriculum that is accessible to all students. This document can form a starting point for planning a curriculum that meets the specific needs of individual students or groups of students. The curriculum must provide appropriate challenges and create enabling opportunities for students to experience

success in learning and achievement to the best of their potential. Teaching and learning processes in the classroom should be planned to respond to the diverse needs of students. Teachers can explore positive strategies for providing education to all children, including those perceived as having disabilities. This can be achieved in collaboration with fellow teachers or with organisations outside the school.

## 2.4 IMPLICATIONS FOR CURRICULUM AND PRACTICE

### 2.4.1 Teaching for Construction of Knowledge

In the constructivist perspective, learning is a process of the construction of knowledge. Learners actively construct their own knowledge by connecting new ideas to existing ideas on the basis of materials/activities presented to them (experience). For example, using a text or a set of pictures/visuals on a transport system coupled with discussions will allow young learners to be facilitated to construct the idea of a transport system. Initial construction (mental representation) may be based on the idea of the road transport system, and a child from a remote rural setting may form the idea centred around the bullock cart. Learners construct mental representations (images) of external reality (transport system) through a given set of activities (experiences). The structuring and restructuring of ideas are essential features as the learners progress in learning. For instance, the initial idea of a transport system built around road transport will be reconstructed to accommodate other types of transport systems—sea and air—using appropriate activities. The engagement of learners, through relevant activities, can further facilitate in the construction of mental images of the relationships (cause-effect) between a transport system and human life/economy. However, there is a social aspect in the construction process in the sense

that knowledge needed for a complex task can reside in a group situation. In this context, collaborative learning provides room for negotiation of meaning, sharing of multiple views and changing the internal representation of the external reality. Construction indicates that each learner individually and socially constructs meaning as he/she learns. Constructing meaning is learning. The constructivist perspective provides strategies for promoting learning by all.

The teacher's own role in children's cognition could be enhanced if they assume a more active role in relation to the process of knowledge construction in which children are engaged. A child constructs her/his knowledge while engaged in the process of learning. Allowing children to ask questions that require them to relate what they are learning in school to things happening outside, encouraging children to answer in their own words and from their own experiences, rather than simply memorising and getting answers right in just one way — all these are small but important steps in helping children develop their understanding. 'Intelligent guessing' must be encouraged as a valid pedagogic tool. Quite often, children have an idea arising from their everyday experiences, or because of their exposure to the media, but they are not quite ready to articulate it in ways that a teacher might appreciate. It is in this 'zone' between what you know and what you almost know that new knowledge is constructed. Such knowledge often takes the form of skills, which are cultivated outside the school, at home or in the community. All such forms of knowledge and skills must be respected. A sensitive and informed teacher is aware of this and is able to engage children through well-chosen tasks and questions, so that they are able to realise their developmental potential.

Active engagement involves enquiry, exploration, questioning, debates, application and reflection, leading

to theory building and the creation of ideas/positions. Schools must provide opportunities to question, enquire, debate, reflect, and arrive at concepts or create new ideas. An element of challenge is critical for the process of active engagement and learning various concepts, skills and positions through the process. What is challenging for a particular age group becomes easy and uninteresting for the other age group, and may be remote and uninteresting at another stage.

So often, in the name of 'objectivity', teachers sacrifice flexibility and creativity. Very often teachers, in government as well as private schools, insist that all children must give identical answers to questions. The argument given for not accepting other answers is that, "They cannot give answers that are not there in the textbook." "We discussed it in the staffroom and decided that we will only accept this answer as right!", or that "There will be too many types of answers. Then should we accept them all?" Such arguments make a travesty of the meaning of learning and only serve to convince children and parents that schools are irrationally rigid. We must ask ourselves why we only ask children to *give* answers to questions. Even the ability to make a set of questions for given answers is a valid test of learning.

#### 2.4.2 The Value of Interactions

Learning takes place through interactions with the environment around, nature, things and people, both through actions and through language. The physical activity of moving, exploring and doing things, on one's own, with one's peers or in the company of adults, and using language — to read, to express or ask, to listen and to interact — are the key processes through which learning occurs. The context in which learning takes place is thus of direct cognitive significance.

#### *Framing Questions...*

**If the answer is '5', what might be the questions? Here are some 'answers'.**

What is four and one make?

What is thirty-three take away twenty-seven plus one?

How many burpees do you want?

I reached my grandmother's house on Sunday and I left on Thursday. How many days did I spend there?

A, B, C came. Then E, F, G, H joined them. Then A and G left. Then G came back, and B went away. How many were left finally?

**If the answer is, 'It was red', what might be the questions?**

What was the colour of the flower?

Why did you put the letter into that box?

Why did she stop so suddenly at the traffic light?

Much of our school learning is still individual based (although not individualised!). The teacher is seen as transmitting 'knowledge', which is usually confused with information, to children, and organising experiences in order to help children learn. But interaction with teachers, with peers, as well as those who are older and younger can open up many more rich learning possibilities. Learning in the company of others is a process of interacting with each other and also through the learning task at hand. This kind of learning is enriched when schools enrol children from different socio-economic backgrounds.

In the early primary school years, a beginning has been made in the area of group work. Projects and activities that can be carried out by groups need to

*Constructivist Learning Situation*

Process	Science	Language
	<p><i>Situation</i></p> <p>Learners read a text on mammals and view a video on the life of mammals in different locales. Such events or activities consist of mammals moving in groups on land or in water, grazing, attacking a prey, giving birth, flocking together at the time of danger and related events.</p>	<p><i>Situation</i></p> <p>Learners read the story 'Kabuliwallah'. Later, they are given background material with illustrations of certain scenes of the story and brief descriptions. A few learners enact one or two scenes depicted in the illustrations.</p>
Observation	Learners make note of the key events or behaviour or activities of mammals.	Learners watch the scenes enacted.
Contextualisation	They relate their analysis to the text.	They relate the story of the text with the illustrations of the background material.
Cognitive apprenticeship	Teacher illustrates how he/she would analyse and interpret such information using the example of mammals.	Using a scene enacted, the teacher models how to integrate reading the story and the illustrations of the background material.
Collaboration	Learners form groups to work on the task while the teacher suggests/guides them as they proceed.	Learners work in groups to generate interpretations while the teacher suggests/guides them as they proceed.
Interpretation construction	Learners analyse and generate evidence to verify their hypothesis related to mammals living on land or water, etc.	They analyse and generate their own interpretations of the story.
Multiple interpretations	They provide explanations and defend their ideas or hypotheses using their analyses and text both within and between groups. Evidence and arguments along with the text expose them to various ways of finding answers or interpreting data.	Comparing the interpretations within and between groups gives the learners the idea that people can have different reactions to the story, 'Kabuliwallah'.
Multiple manifestations	By going back and forth through the process and relating each contextual background on various events and the behaviour of mammals, the learners notice that the general principles embedded in what they are doing become manifested.	Using the text, background illustrations and their own reflections, the learners see how the same characters and themes can be manifested in several ways.

*Role of the Teacher :* In this context, the teacher is a facilitator who encourages learners to reflect, analyse and interpret in the process of knowledge construction.



become a feature of learning in the middle and high school also. There are ways in which such group learning can be assessed and evaluated. Schools could also consider giving mixed age groups of children projects to do together. In such mixed groups, there is much that children can learn from each other, such as team work and social values. In the company of others, one has opportunities of participating in larger tasks where one may find a niche to contribute to, thus achieving something above one's own potential, and one may be able to try out what one does not fully know. Group learning tasks, taking responsibility, and contributing to a task at hand are all important facets of not only acquiring knowledge but also in the learning of arts and crafts. In a multi-grade class situation, such vertical grouping, which cuts across different grades, and which allows a single activity to be used across different age groups, could provide a pedagogically feasible and sound curriculum plan.

### 2.4.3 Designing Learning Experiences

The quality of the learning task influences its learnability and its value for the learner. Tasks that are too easy or too difficult, that are repetitive and mechanical, that are based on recalling the text, that do not permit self-expression and questioning by the child and that depend solely on the teacher for correction, make the child assume the passive stance of obedience. Learners learn not to value their own ability to think and reason, that knowledge is created by others and that they must only receive it. The onus falls teacher to 'motivate' children who do not seem to be naturally motivated. Learners accept being controlled and learn to want to control. These are ultimately detrimental to the growth of cognitive self-reflexivity and flexibility which are essential if learning is to empower the learner. By the time they reach Class VII, many children who

have grown up in this kind of learning environment, lose their self-confidence and their ability to express themselves or make meaning out of their experiences in school. They repeatedly resort to mechanical rote memorisation to pass examinations.

Instead, tasks that are challenging and allow independent thinking, and multiple ways of being solved, encourage independence, creativity and self-discipline in learners. Instead of a culture of quizzing, of answering quickly and always knowing the right answer, we need to allow learners to spend time on deeper, meaningful learning.

Learning tasks that are designed to ensure that children will be encouraged to seek out knowledge from sites other than the textbook, in their own experience, in the experiences of people at home and in the community, in libraries and other sites outside the school, communicate the philosophy that learning and knowledge are to be sought out, authenticated and thereby constructed, and that neither the textbook nor the teacher is an authority. In this context, heritage sites assume great significance as sites of learning. Not only the history teacher, but also teachers of all subjects need to inculcate in the children under their care a sense of respect for sites of archaeological significance and the desire to explore and understand their importance.

There have been efforts aimed at improving the classroom environment and curriculum planning for children in Classes I and II in recent years. While these need to be reviewed and strengthened, there is also a need to engage with questions of designing learning experiences for older children that help them understand concepts and create and 'own' the knowledge that they learn. We are now seeing a small shift away from the focus on 'factual knowledge', but teacher preparation, planning of classroom practice, textbook preparation, and evaluation need to support this shift more decisively.

There is a need for incorporating flexibility in planning and adapting textbook content to designing topic learning, so as to move towards the NPE-86 goal of breaking out of watertight compartments. For this, it is necessary to build the capabilities and confidence of teachers to autonomously plan their teaching in response to the needs and demands of children's learning. Currently, pedagogic reform efforts are still very centralised. Effective decentralisation would be possible through the greater involvement of Cluster and Block Resource Centres, the availability of local resource persons, and of resource and reference materials for the use of teachers.

#### 2.4.4 Approaches to Planning

Our educational practice is still based on limited 'lesson plans' aimed at achieving measurable 'behaviours'; according to this view, the child is akin to a creature that can be trained, or a computer that can be programmed. Hence, there is too much focus on 'outcomes', and presenting knowledge divided into bits of information to be memorised directly from the text or through activities after 'motivating' children, and finally on evaluating to see if children remember what they have learnt. Instead, we need to view the child as 'constructing knowledge' all the time. This is true not only of 'cognitive subjects' such as mathematics and science, language and social science, but equally of values, skills and attitudes.

This perspective on the learner may sound 'obvious', but, in fact, many teachers, evaluators, and textbook writers still lack the conviction that this can become a reality.

- The term 'activity' is now a part of the register of most elementary schoolteachers, but in many cases this has just been grafted onto the 'Herbartian' lesson plan, still driven by 'outcomes' at the end of each lesson. There is now more

#### *Organising experiences*

*Observing something happen, say, the process of seed germination, in a real situation or observing different stages of milk collection, processing and packaging different kinds of products in a dairy farm.*

*Participating in an exercise involving body and mind such as planning a role play around a theme and presenting it.*

*Talking about and reflecting on something the child has experience of (e.g. dialogue on gender-differentiated practices in the family and society or participating in a mental game of numbers).*

*Making something, say, a system of gear wheels or trying out an experiment to lift a load using a system of pulleys.*

*After the experience, teachers could organise a discussion, an exercise involving writing, drawing and display. She could identify along with the children questions to be thought about and answered.*

*She could connect the experience with textbook knowledge and other references and deepen the experience.*

*Such experiences and post-experience activities would be valuable at any level of schooling. Only the nature and complexity of the experience would need to change over the years. Language is key to organising experiences. Hence, there should be a proper coordination between the kind of experience and the level of language development.*

talk of competencies, but these competencies are still pegged onto lessons much in the manner of 'outcomes'. Instead, teachers need to develop the ability to plan 'units' of four or five sessions for each topic. The development of understanding and of competencies is also possible only through repeated opportunities to use the competencies in different situation, and in a variety of ways. While the development of knowledge, understanding and skills can be assessed both at

the end of a unit, and revisited at a later date, the assessment cycle for competencies needs to be longer.

- Activities could enable teachers to give individualised attention to children, and to make alterations in a task depending on their requirements and variations in the level of interest. In fact, teachers could also consider involving children and older learners in planning the class work, such variety would bring tremendous richness to the classroom processes. It would also allow teachers to respond to the special needs of some children without making it seem as if it is an obvious exception. There is still not enough engagement on the part of the teacher with the learning of each child; children are treated en masse, and only those who are regarded as 'stars' or 'problematic' are noticed. All children would benefit from such attention.
- A lesson plan or unit plan for an inclusive class should indicate how the teacher alters the ongoing activity to meet the different needs of children. Failure to learn is currently being mechanically addressed through 'remediation', which usually means simply repeating lessons. Many teachers are also looking for 'cures' to set right the problems that some children may experience. They still find it difficult to individualise learning for children by building upon the strengths that children may have.
- Teachers need to understand how to plan lessons so that children are challenged to think and to try out what they are learning, and not simply repeat what is told to them. A new problem is that in the name of 'activities' and 'play way' methods, a lot of learning is being diluted by giving children things to do that are far below their capability.

One concern is that a focus on activities would become too time consuming and make greater demands on teachers, time. Certainly, doing activities requires that time be spent in planning and preparing for activities. Initially, teachers need to make an effort to establish the classroom culture for activities and to establish the rules that will govern the space and use of materials.

- Planning with the support of appropriate material resources for individualised, small group and whole group work is the key to effective management of instruction in a multigrade, multiability or vertically grouped classroom. Instead of finding ways of juggling lesson plans based on mono-grade textbooks, teachers would need to devise, in advance, thematic topic plans in order to engage learners with exercises created for their level.
- The practices of teachers in classrooms, the materials they use, and the evaluation techniques employed must be internally consistent with each other.

#### 2.4.5 Critical Pedagogy

Teacher and student engagement is critical in the classroom because it has the power to define whose knowledge will become a part of school-related knowledge and whose voices will shape it. Students are not just young people for whom adults should devise solutions. They are critical observers of their own conditions and needs, and should be participants in discussions and problem solving related to their education and future opportunities. Hence children need to be aware that their experiences and perceptions are important and should be encouraged to develop the mental skills needed to think and reason independently and have the courage to dissent. What children learn

out of school — their capacities, learning abilities, and knowledge base — and bring to school is important to further enhance the learning process. This is all the more critical for children from underprivileged backgrounds, especially girls, as the worlds they inhabit and their realities are underrepresented in school knowledge.

Participatory learning and teaching, emotion and experience need to have a definite and valued place in the classroom. While class participation is a powerful strategy, it loses its pedagogic edge when it is ritualised, or merely becomes an instrument to enable teachers to meet their own ends. True participation starts from the experiences of both students and teachers.

*Critical pedagogy provides an opportunity to reflect critically on issues in terms of their political, social, economic and moral aspects. It entails the acceptance of multiple views on social issues and a commitment to democratic forms of interaction. This is important in view of the multiple contexts in which our schools function. A critical framework helps children to see social issues from different perspectives and understand how such issues are connected to their lives. For instance, understanding of democracy as a way of life can be chartered through a path where children reflect on how they regard others (e.g. friends, neighbours, the opposite sex, elders, etc.), how they make choices (e.g. activities, play, friends, career, etc.), and how they cultivate the ability to make decisions. Likewise, issues related to human rights, caste, religion and gender can be critically reflected on by children in order to see how these issues are connected to their everyday experiences, and also how different forms of inequalities become compounded and are perpetuated. Critical pedagogy facilitates collective decision making through open discussion and by encouraging and recognising multiple views.*

*Why should stereotypes persist?*

*A matter of serious concern is the persistence of stereotypes regarding children from marginalised groups, including SC and ST, who traditionally have not had access to schooling or learning. Some learners have been historically viewed as uneducable, less educable, slow to learn, and even scared of learning. There is a similar stereotype regarding girls, which encourages the belief that they are not interested in playing games, or in mathematics and science. Yet another set of stereotypes is applied to children with disabilities, perpetuating the notion that they cannot be taught along with other children. These perceptions are grounded in the notion that inferiority and inequality are inherent in gender, caste and physical and intellectual disability. There are a few success stories, but much larger are the numbers of learners who fail and thus internalise a sense of inadequacy. Realising the constitutional values of equality is possible only if we prepare teachers to treat all children equally. We need to train teachers to help them cultivate an understanding of the cultural and socio-economic diversity that children bring with them to school.*

*Many of our schools now have large numbers of first-generation school goers. Pedagogy must be reoriented when the child's home provides any direct support to formal schooling. First-generation school goers, for example, would be completely dependent on the school for inculcating reading and writing skills and fostering a taste for reading, and for familiarising them with the language and culture of the school, especially when the home language is different from the language of school. Indeed they need all the assistance they can get. Many such children are also vulnerable to conditions prevailing at home, which might make them prone to lack of punctuality, irregularity and inattentiveness in the classroom. Mobilising intersectoral support for freeing children from such constraints, and for designing a curriculum sensitive to these circumstances, therefore is essential.*

When children and teachers share and reflect on their individual and collective experiences without fear of judgement, it gives them opportunities to learn about others who may not be a part of their own social reality. This enables them to understand and relate to differences instead of fearing them. If children's social experiences are to be brought into the classroom, it is inevitable that issues of conflict will need to be addressed. Conflict is an inescapable part of children's lives. They constantly encounter situations that call for moral assessment and action, whether in relation to subjective experiences of conflict involving the self, family and society, or in dealing with exposure to violent conflict in the contemporary world. To use conflict as a pedagogic strategy is to enable children to deal with conflict and facilitate awareness of its nature and its role in their lives.

Learning to question received knowledge critically, whether it is found in a 'biased' textbook, or other literary sources in their own environments, can be built by encouraging learners to comment, compare and think about elements that exist in their own environment. Women and dalit activists have used songs as a powerful medium for discussion, comment and analysis. Repositories of knowledge exist in different mediums, hence all these forms, whether television programme, advertisements, songs, paintings, etc., need to be brought into create a dynamic interaction among learners themselves.

A pedagogy that is sensitive to gender, class, caste and global inequalities is one that does not merely affirm different individual and collective experiences but also locates these within larger structures of power and raises questions such as, who is allowed to speak for whom? Whose knowledge is most valued? This requires evolving different strategies for different learners. For example, encouraging speaking up in class may be

important for some children, while for others it may be learning to listen to others.

The role of teachers is to provide a safe space for children to express themselves, and simultaneously to build in certain forms of interactions. They need to step out of the role of 'moral authority' and learn to listen with empathy and without judgement, and to enable children to listen to each other. While consolidating and constructively stretching the limits of the learner's understanding, they need to be conscious of how differences are expressed. An atmosphere of trust would make the classroom a safe space, where children can share experiences, where conflict can be acknowledged and constructively questioned, and where resolutions, however tentative, can be mutually worked out. In particular, for girls and children from under-privileged social groups, schools and classrooms should be spaces for discussing processes of decision making, for questioning the basis of their decisions, and for making informed choices.

## 2.5 KNOWLEDGE AND UNDERSTANDING

The question, 'What should be taught to the young?' derives from a deeper question, namely, What aims are worth pursuing in education? The answer is a vision of the capabilities and values that every individual must have and a socio-political and cultural vision for society. This is not a single aim, but a set of aims. So also the content selected seeks to do justice to the entire set of aims; it has to be comprehensive and balanced. The curriculum needs to provide experiences that build the knowledge base through a progressive introduction to the capabilities of thinking rationally, to understand the world through various disciplines, foster aesthetic appreciation and sensitivity towards others, to work and to participate in economic processes. This section discusses the nature and forms of knowledge and

### *Talking Pictures*

*Show the class a picture of a household with various members of the family performing different tasks. The difference is that the father is cooking, the mother fixing a light bulb, the daughter returning from school on a bicycle, and the son milking a cow, the other sister climbing a mango tree, and the other son sweeping the floor. The grandfather is sewing on a button, and the grandmother is doing the accounts.*

*Ask the children to talk about the picture.*

*What are the 'works' they can identify?*

*Do they think that there is any work that these people should not be doing?*

*Why?*

*Involve them in a discussion on the dignity of labour, equality and gender.*

*Discuss the importance of each individual being self-sufficient and complete.*

*This can be done for other topics such as good and bad work, caste stereotyping and the value-added nature of work through similar talking pictures.*

understanding as necessary elements terrains for making informed curricular choices and approaches to content.

Knowledge can be conceived as experience organised through language into patterns of thought (or structures of concepts), thus creating meaning, which in turn helps us understand the world we live in. It can also be conceived of as patterns of activity, or physical dexterity with thought, contributing to acting in the world, and the creating and making of things. Human beings over time have evolved many *bodies of knowledge*, which include a repertoire of *ways of thinking, of feeling and of doing things*, and constructing more knowledge. All children have to re-create a significant part of this wealth for themselves, as this constitutes the basis for further thinking and for acting appropriately in this world. It is also important to learn to participate in the very process of knowledge creation, meaning making and human action, i.e. work. Conceiving knowledge in this broad sense directs us to the importance of examining knowledge in terms of not only the 'product', but also the underlying principles of how it is created, how it is organised, who accesses

it, and what it is used for. It suggests that in the curriculum, there must be as much focus on the process of learning, on how learners engage with and reconstruct knowledge, as on the content of what is learnt.

If, on the other hand, knowledge is regarded as a finished product, then it is organised in the form of information to be 'transferred' to the child's mind. Education would concern itself with maintaining and transmitting this store - house of human knowledge. In this view of knowledge, the learner is conceived of as a passive receiver, while in the former there is a dynamic engagement with the world through observing, feeling, reflecting, acting, and sharing.

The curriculum is a plan to develop capabilities that are likely to help achieve the chosen educational aims. The range of human capabilities is very wide, and through education we cannot develop them all. The concern is therefore with those that are necessary and significant in relation to our aims, which offer potential for further development, and for which we have some pedagogic knowledge.

### 2.5.1 Basic Capabilities

Children's basic capabilities are those that form the broad basis for the development of understanding, values and skills.

a. **Language** and other forms of expression provide the basis for meaning making, and sharing with others. They create possibilities of development of understanding and knowledge, providing the ability to symbolise, codify, and to remember and record.

Development of language for a child is synonymous with development of understanding and identity, and also the capability of relating with others. It is not only verbal languages with scripts, but also languages without scripts, sign languages, scripts such as Braille and the performing arts, that provide the bases for making meaning and the expression.

b. **Forming and sustaining relationships** with the social world, with the natural world, and with one's self, with emotional richness, sensitivity and values. This gives meaning to life, providing it with emotional content and purpose. This is also the basis for ethics and morality.

c. **Capabilities for work and action** involves the coordination of bodily movement with thought and volition, drawing on skill and understanding, and directing oneself to achieve some purpose or create something. It also involves handling tools and technologies, and the ability to manipulate and organise things and experiences, and to communicate.

### 2.5.2 Knowledge in Practice

A vast array of human activities and practices sustain social living and culture. Crafts such as weaving, carpentry and pottery, and occupations such as farming and shopkeeping, constitute alongwith and performing and visual arts and sports a valuable form of knowledge. These forms of knowledge are of a practical nature, tacit and often only partially articulated.

Many of them involve abilities that are developed. These include the ability to conceptualise and imagine products that are useful or aesthetic, the knowledge of and ability to work with materials to fashion a product, knowledge of one's own abilities, appreciation of team work, and attitudes of persistence and discipline. This is true whether it is an object being fashioned or whether it is a play a to be presented to an audience.

Describing these activities as skills draws attention to only the dexterities that are involved, but not to the considerable understanding of the social and natural world and the self that each of these forms of practice involves. Like accepted academic disciplines, these crafts and trades too have their traditions and expert practitioners. The knowledge relevant to each of these crafts, occupations and art forms is cumulatively developed and is passed on through experience and

A craft like carpentry involves the ability to conceptualise and design the object to be made, an understanding of its value in the society (socio-cultural, aesthetic and economic significance), knowledge of materials available and the most suitable in terms of quality and cost for the product to be made, knowledge of where to source materials, the ability to plan and execute the fashioning of the product from beginning to end, using one's own skills and sourcing relevant skills from others, maintaining the necessary tools, judging for quality, creativity and excellence in craftsmanship.

A sport like *kabaddi* involves physical stamina and endurance, knowledge of rules of the game, skills and physical dexterity, and knowledge of one's own capacities, ability to plan and coordinate as a team, to assess the other team, and to strategise to win.

reflection to the next generation of practitioners. Therefore, each one of them is a discipline of practical knowledge. The Indian heritage of such forms of

### *Oral and Craft Traditions*

The oral lore and traditions of craft are a unique intellectual property, varied and sophisticated, preserved by innumerable groups in our society, including women, marginalised, and communities, and tribal people. By including these in the curriculum for all children, we could provide them with windows of understanding and kernels of ideas, skills and capabilities that could be worked into forms and inventions that could enrich their own lives and society. School privileges the literate, but cannot afford to continue to ignore the oral. Sustaining oral skills of all kinds is important.

practical knowledge is vast, varied and rich. As productive skills, they are an invaluable part of the economy.

More reflection and research is needed in order to understand the epistemological structure of these practical disciplines. Understanding how they are practised and learnt, and how to formalise their learning, are questions of sociological importance as traditional occupations are linked to caste groups and are gendered. It is necessary to realise their curricular significance, not only as forms of work but equally as forms of knowledge, and as mediums for other learning. This important area of human knowledge needs to become a substantial part of the school curriculum.

### **2.5.3 Forms of Understanding**

Knowledge can be categorised based on distinct kinds of concepts and meanings involved and processes of validation and justification. Each involves its own kind of 'critical thinking', its own way of verifying and authenticating knowledge, and its own kind of 'creativity'.

*Mathematics* has its own distinctive concepts, such as prime number, square root, fraction, integer and

function. It also has its own validation procedure, namely, a step-by-step demonstration of the necessity of what is to be established. The validation procedures of mathematics are never empirical, never based on observation of the world or on experiment, but are demonstrations internal to the system specified by an appropriate set of axioms and definitions.

The *Sciences*, like the systems of mathematics, have their own concepts, often interconnected through theories, and are attempts to describe and explain the natural world. Concepts include atom, magnetic field, cell, and neuron. Scientific inquiry involves observation and experimentation to validate predictions made by theory (hypotheses), which may be aided by instruments and controls. Formalisation into theory and model building can sometimes involve mathematics, but it is only with reference to observations and not to mathematical accuracy that truth is tested. The attempt is to furnish a narrative that in some way 'corresponds' to reality.

*The Social Sciences* and *Humanities* have their own concepts, for example, community, modernisation, culture, identity, and polity. The Social Sciences aim at developing a generalised and critical understanding of human beings and human groups in society. The Social Sciences concern themselves with description, explanation and prediction in the social world. The Social Sciences deal with hypotheses that are about human behaviour in collective living, and their validation finally depends on the observations made in the society. With regard to the process of knowledge formation, Science and the Social Sciences are almost identical. But there are two differences that are of great relevance in curriculum planning. First, the Social Sciences study human behaviour which is governed by 'reasons', while nature is governed by 'cause and effect'. Second, the findings of the Social Sciences often raise issues of



ethics and desirability while natural phenomena can be understood, raising ethical questions only when they enter into the domain of human action.

*Art and aesthetics* have many words in common, such as rhythm, harmony, expression and balance, though giving them new senses or new ranges of application. Art productions cannot be judged against reality or investigated for ‘truth’. Although there is ample scope for subjective judgement in art, it is also possible to educate the artistic imagination to critically assess what is good and what is not.

*Ethics* is concerned with all human values, and with the rules, principles, standards and ideals which give them expression. In relation to action and choice, therefore, ethics must be conceded primacy over each of the forms of understanding. Ethical understanding involves understanding reasons for judgements—for what makes some things and some acts right and others wrong—regardless of the authority of the persons involved. Furthermore, such reasons will be reasons

for anyone; reason, equality and personal autonomy are therefore very intimately connected concepts.

*Philosophy* involves a concern, on the one hand, with analytical clarification, evaluation and synthetic coordination of the aforementioned forms of understanding in relation to life, and, on the other hand, with the whole, the ultimate meaning and the transcendent.

The basic capabilities, the knowledge of practice and the forms of understanding are the core ways in which human experience has been elaborated in the course of history. All but the simplest kinds of human activity draw upon them—the liberal professions, technology, industry and commerce. They are central to human culture. Imagination and critical thinking are linked in obvious ways with the development of understanding and reason, and so are the emotions.

Each of these knowledge areas involves a special vocabulary, concepts, theories, descriptions and methodologies. Each provides a ‘lens’ through which to view the world, to understand, to engage, and to act in it. These areas have developed, and continue to grow, through the contributions of people in the past. They have also changed in their structure and emphasis. A variety of intelligence and forms of knowing come into play while learning these areas: ‘formal modes’ of explicit reasoning and articulation; looking for and evaluating evidence; ‘experiential’ and tacit knowing through doing and undergoing the experience; coordinating and observing; and ‘practical’ engagement, either by oneself or in coordination with others in making or accomplishing something, in addressing problems and issues while charting a course of action. Creativity and excellence are integral to all these forms of knowledge and knowing.

This accumulation of human culture and knowledge, and ways of knowing and doing things, is

### *Layers of understanding*

Comprehension: understanding the language, and the (linguistic) contents of what is said.

Reference: understanding what is being talked about—what the terms and concepts refer to.

Epistemic: understanding what counts as evidence, what makes a statement true, how to seek evidence and judge truth.

Relational and Significant: understanding through developing interconnections between different facts and concepts and weaving them into an interconnected web of ‘known things’, understanding relationships between different things, and the significance of each in relation to the other.

a valuable part of the inheritance of human society. All our children have a right to access this knowledge, to educate and enrich their common sense, to develop and discover themselves and the world of nature and people, through these lenses and tools.

## 2.6 RECREATING KNOWLEDGE

These capabilities, practices, and skills of understanding are what we seek to develop through the school curriculum. Some of them readily lend themselves to being formulated as 'subjects' of study such as mathematics, history, science, and the visual arts. Others, such as ethical understanding, need to be interwoven into subjects and activities. The basic capabilities of language require both approaches, and aesthetic understanding also readily lends itself to both approaches. All these areas require opportunities for project activities, thematic and interdisciplinary courses of studies, field trips, use of libraries and laboratories.

This approach to knowledge necessitates a move away from 'facts' as ends in themselves, and a move towards locating facts in the process through which they come to be known, and moving below the surface of facts to locate the deeper connections between them that give them meaning and significance.

In India, we have traditionally followed a subject-based approach to organising the curriculum, drawing on only the disciplines. This approach tends to present knowledge as 'packaged', usually in textbooks, along with associated rituals of examinations to assess, knowledge acquisition and marks as a way of judging competence in the subject area. This approach has led to several problems in our education system. First, those areas that do not lend themselves to being organised in textbooks and examined through marks become sidelined and are then described as 'extra' or 'co-curricular', instead of being an integral

part of the curriculum. These rarely receive the attention they deserve in terms of preparation by teachers or school time. Areas of knowledge such as crafts and sports, which are rich in potential for the development of skill, aesthetics, creativity, resourcefulness and team work, also become sidelined. Important areas of knowledge such as work and associated practical intelligences have been completely neglected, and we still do not have an adequate curriculum theory to support the development of knowledge, skills and attitudes in these areas.

Second, the subject areas tend to become watertight compartments. As a result, knowledge seems fragmented rather than interrelated and integrated. The discipline, rather than the child's way of viewing the world, tends to become the starting point, and boundaries get constructed between knowledge in the school and knowledge outside.

Third, what is already known gets emphasised, subverting children's own ability to construct knowledge and explore novel ways of knowing. Information takes precedence over knowledge, lending itself to producing bulky textbooks, 'quizzing' and methods of mechanical retrieval rather than understanding and problem solving. This tendency of mistaking information for knowledge leads to 'loading' the curriculum with too many facts to be memorised.

Fourth, there is the issue of including 'new subjects'. The need for subjects addressing contemporary concerns of society is important. But there has been a misplaced tendency to address these concerns in the school curriculum by 'creating' new subjects, producing related textbooks and devising methods of evaluation for them. These concerns may be far better addressed if they are incorporated in the curriculum through existing subjects and ongoing activities. Needless to say, adding new areas as 'subjects'

only increases the curriculum load, and perpetuates undesirable compartmentalisation of knowledge.

Finally, the principles for selecting knowledge for inclusion in the curriculum are not well worked out. There is insufficient consideration of developmental appropriateness, logical sequencing and connection between different grades, and overall pacing, with a few or no opportunities to return to earlier concepts. Further, concepts that cut across subject areas, such as in secondary school mathematics and in physics, are not placed in relation to one another

## 2.7 CHILDREN'S KNOWLEDGE AND LOCAL KNOWLEDGE

The child's community and local environment form the primary context in which learning takes place, and in which knowledge acquires its significance. It is in interaction with the environment that the child

constructs knowledge and derives meaning. This area has generally been neglected both in the conceptualisation of textbooks and in pedagogic practices. Hence, in this document, we emphasise the significance of contextualising education: of situating learning in the context of the child's world, and of making the boundary between the school and its natural and social environment porous. This is not only because the local environment and the child's own experiences are the best 'entry points, into the study of disciplines of knowledge, but more so because the aim of *knowledge is to connect with the world*. It is not a means to an end, but both means and end. This does not require us to reduce knowledge to the functional and immediately relevant, but to realise its dynamism by connecting with the world through it.

Unless learners can locate their individual standpoints in relation to the concepts represented in textbooks and relate this knowledge to their own experiences of society, knowledge is reduced to the level of mere information. If we want to examine how learning relates to future visions of community life, it is crucial to encourage reflection on *what it means to know something*, and how to use what we have learnt. The learner must be recognised as a proactive participant in his or her own learning.

Day after day children bring to school their experiences of the world around them the trees that they have climbed, the fruits they have eaten, the birds they have admired. All children are alive to the natural cycles of day and night, of the weather, the water, the plants and the animals that surround them. Children, when they enter Class I already have a rich language base of small numbers, and the rudiments of operations are already in place. Yet rarely do we hear the knowledge that they already have and which they bring into the classroom. Rarely do we ask children to

### *Selecting Knowledge*

Domains of knowledge have grown enormously, so that it is necessary to select what is to be included in the curriculum.

**Relevance:** This could lead to very functionalist choices, with mistaken notions relating to usefulness in later adult life. This may be completely unsuited to children's engagement in knowledge construction in the present, and hence in no way contributes to learning for the future.

**Interest:** A useful measure, but this should not be reduced to simplistic notions of what children enjoy, such as 'cartoon' figures or games. Rather the measure should be the ability to engage a child and keep her interested and self-motivated to engage in the task at hand.

**Meaningful:** The most important measure. Only if the child finds the activity or knowledge being learnt meaningful, will its inclusion in the curriculum be justified.

talk about or refer to the world outside the school during our lessons and teaching. Instead we resort to the convenience of the printed word and picture, all of which are poor replicas of the natural world. Worse still, today in the name of computer-aided learning, the living world is being turned into animation strips that children are expected to watch on their computer screens. Before starting a lesson on living and non-living, if a teacher was to take her class out on a walk through a field near the school, and on returning asked each child to write the names of ten living things and ten non-living things that she/he saw, the results would be amazing. Children in Mahabalipuram in Tamil Nadu may include in their list of things sea shells, pebbles and fish, and those in Chhattisgarh near the Dandakaranya forest may include nest, bee hive, and anklet. Instead, children are usually required to look at a drawing in the textbook, or a list of words, and sort the things out as living and non-living. During a lesson on water pollution, children could examine the water sources and water bodies and then connect these with different types of pollution. This exercise could also raise issues regarding how lack of safe water affects health. Instead, children are expected to see pictures of polluted water and comment on them. When studying the moon and its phases, how many teachers actually ask the children to look at the moon at night and then talk about it the next day? Instead of asking children the names of local birds and trees, our textbooks name 'ubiquitous' things that seem to belong everywhere and yet belong nowhere. Only if children in, say Class VIII, can connect the chapter on photosynthesis with the real plants around would they think of asking questions such as, 'How do crotons, which have coloured leaves but no green leaves, manage to manufacture their food?' Only when the living world around becomes available for critical reflection within

### *Participating in the Generation of Knowledge*

Given its intrinsic variability, each manifestation of the environment tends to be unique. Its understanding cannot, therefore, be arrived at solely on the basis of the classical scientific approach of experimentation, calling for extensive replication. Instead, an understanding of such complex systems requires extensive locale- and time-specific observations, careful documentation, and an elucidation of the patterns and underlying processes based on comparisons of systems that differ from each other in some specific ways. There is hardly any good quality documentation available today of the many facets of India's environment, such as the depth of the underground water table, and it is feasible to create such documentation on the basis of student projects. It would be possible to upload the results of such projects on a publicly accessible website, thereby creating a transparent and comprehensive database on India's environment. By inviting not only experts, but also all interested citizens to assess the quality of such projects and augment their results, a self-correcting system could be set up that would lead to an organic growth of our understanding of the Indian environmental scenario and concrete ways of undertaking positive action. Such information collated annually over the years, and also shared with and compared with other regions, and collated centrally would produce a significant understanding of ecological changes and develop a perspective on what is happening and why through comparisons. Including such knowledge-generation activities as a part of the educational process would also greatly enhance the quality of the educational experience.

the school will children become alive to the issues of the environment and nurture their concern for it.

The local environment is thus a natural learning resource, which must be privileged when making choices regarding what should be included, what

concrete examples should be cited in planning for their transaction in the classroom. In the case of content selection for the Social Sciences and language, it is important to keep in mind the ideals and values enshrined in the Constitution. Inclusion of the local context in classroom transaction would imply a serious attempt by the teacher to make choices in a manner that is pedagogically imaginative and ethically sound. When children living in Kerala are introduced to the habitat of the desert in Rajasthan, the descriptions must be rich and detailed so that they can get a feel of the natural world there, in all its particularities and diversity, rather than evoking images of the typical sand dune and the camel. They should wonder how in a place so hot people wear more rather than fewer clothes. They

should also be able to compare life there with life around them in their local community, and ask what things would happen in the same way, and what things would happen differently.

The local environment consists not only of the physical and natural world but also the socio-cultural world. All children have a voice at home, and it is essential for the school to ensure that their voices continue to be heard in the classroom as well. Communities also have rich cultural resources: local stories, songs, jokes and riddles, and art, all of which can enrich language and knowledge in schools. They also have rich oral histories. By imposing silence we stifle children.

## 2.8 SCHOOL KNOWLEDGE AND THE COMMUNITY

Experiences of the socio-cultural world also need to become a part of the curriculum. Children need to find examples of the plurality of peoples and ways of life represented in the textbooks. These portrayals need to ensure that no community is oversimplified, labelled, or judged. It may even be better for children to study and generate portrayals of the local social groups as a part of their social science studies. They can then directly interact with the gram panchayat representative, who may be invited to the school to speak about the extent to which decentralisation has helped in addressing local civic issues. Local oral history could also be connected with regional history and national history. But the social context also calls for a much greater critical awareness and critical engagement on the part of curriculum developers and teachers. Community-based identities, of gender, caste, class and religion are primary identities, but they can also be oppressive and reaffirm social inequalities and hierarchies. School knowledge can also provide a lens

### *Local Knowledge Traditions*

Many communities and individuals in India are a rich storehouse of knowledge about many aspects of India's environment, acquired over generations and handed down as traditional knowledge, as well as through an individual's practical experience. Such knowledge may pertain to: naming and categorising plants, or ways of harvesting and storing water, or of practising sustainable agriculture. Sometimes these may be different from the ways in which school knowledge approaches the subject. At other times, it may not be recognised as something that is important. In these situations, teachers could help children develop projects of study based on local traditions and people's practical ecological knowledge; this may also involve comparing these with the school approach. In some cases, as in the case of classifying plants, the two traditions may be simply parallel and be based on different criteria considered significant. In other cases, for example the classification and diagnosis of illnesses, it may also challenge and contradict local belief systems. However, all forms of local knowledge must be mediated through Constitutional values and principles.

through which children can develop a critical understanding of their social reality. It could also provide them space to talk about their experiences and anxieties within their homes.

Communities may also have questions about the inclusion or exclusion of particular knowledge and experiences in the school curriculum. The school must then be prepared to engage with communities to listen to their concerns, and to persuade them to see the educational value of such decisions. For this, teachers must know the reasons why something is included while something else is not. They must also be able to win the trust of parents in matters like allowing children to use home language in school, or teaching about sexuality and reproduction, or play-way methods in primary school, or encouraging boys to sing and dance. It is not a good enough explanation to say that the decisions were taken at the state level. If we are to ensure participation of children of all groups in our secular education, we will have to discuss our curricular choices with others who are legitimate stakeholders in education.

## 2.9 SOME DEVELOPMENTAL CONSIDERATIONS

Children's interests, physical skills, linguistic capacity, and ability for abstract thinking and generalisation develop over the span of schooling, from the pre-school period through higher secondary school. This is a period of intensive growth and development, and also of fundamental shifts and changes in interests and capabilities. Hence, it is an important dimension of determining the approach to, and selection and organisation of the areas of the curriculum.

The creation or recreation of knowledge requires an experiential base, language abilities, and interaction with other humans and the natural world. Children entering school for the first time have already begun constructing knowledge of the world. Everything they

Some principles regarding the approach to knowledge in the curriculum :

- √ Acquiring a critical perspective on social reality and the natural environment through the lenses provided by the subject matter.
- √ Connecting with the local and the contextualised in order to 'situate' knowledge and realising its 'relevance' and 'meaningfulness'; to reaffirm one's experiences outside school; to draw one's learning from observing, interacting with, classifying, categorising, questioning, reasoning and arguing in relation to these experiences.
- √ Making connections across disciplines and bringing out the interrelatedness of knowledge.
- √ Realising the 'fruitfulness' and 'openness' of enquiry, and the provisional nature of truth.
- √ Engaging with 'local knowledge'/indigenous practices in the local area, and relating these to school knowledge wherever possible.
- √ Encouraging questions and leaving space open for the pursuit of new questions.
- √ Being sensitive to the issues of 'equality' in classroom transaction as well as established stereotypes and discrimination regarding learnability of the knowledge area by different groups (e.g. girls not being given field-based projects, the blind being excluded from the option of learning mathematics, etc.).
- √ Developing the imagination, and keeping imagination and fantasy alive.

learn later will be in relation to this knowledge that they bring into the classroom. This knowledge is also intuitive. School provides opportunities to build on this in a more conscious and engaged manner. At the early stage of learning, from pre-school to the primary

school years, an important place must be given to language and mathematics in all activities across the curriculum. The division into subjects is not very significant, and the knowledge areas discussed above can be totally integrated and presented to children in the form of learning experiences of the environment. This should include an enriching interaction with the natural and social environment, working with one's hands, and understanding of social interactions, and developing one's aesthetic abilities. These early integrated experiences of the natural and social environment would later become demarcated into science and the social sciences in the middle school years.

The upper primary or middle school period may be the place for the emergence of better defined subject areas, taking into consideration the above-mentioned forms of knowledge. At this stage it should be possible to create spaces across subjects in which children engage in the process of data collection, natural, social, mathematical or linguistic, to classify and

categorise, and also analyse the same through certain knowledge areas such as ethical understanding and critical thinking. The creation of a space for explorations into social issues and knowledge without boundaries could at this stage go a long way in encouraging rational thinking.

By the time children reach the secondary stage of education, they have acquired a sufficient knowledge base, experience, language abilities and maturity to engage with different forms of knowledge in the full sense: concepts, structure of body of knowledge, investigation methods and validation procedures. Therefore, the subjects could be more closely linked with the basic forms as listed above and the disciplines as they are recognised in higher education today.

The issues of adequate representation of all forms of knowledge, and emphasis on similarities, special characteristics, and the widest possible interconnections between them, become important when the subject areas are more clearly defined.