Chapter 4: School and Classroom Environment

Learning takes place within a web of social relationships as teachers and pupils interact both formally and informally. Schools are institutional spaces for communities of learners, including both students and teachers. Play and scuffle with one's friends on the school grounds, free time to sit on the benches and chat with one's friends during breaks, gathering together for morning assembly and other festive and significant occasions in the school, studies carried out in the classroom, anxious turning of pages before a class test, and trips made with one's classmates and teachers to places outside the school — all these are activities bringing the community together, giving it the character of a learning community. Behind the scenes, but still significant in giving the school its character, are the teachers and the headmaster, planning and carrying out daily routines, examinations and special events that mark the school calendar. How can we organise the environment in the school and classroom so that such interactions support and enhance both teaching and learning? How can the space of the school be nurtured as a context where children feel safe, happy and wanted, and which teachers

find meaningful and professionally satisfying? The physical and psychological dimensions of the environment are important and are interrelated. In this chapter we examine these environments to understand how they significantly influence children's learning.

4.1 THE PHYSICAL ENVIRONMENT

Children are constantly interacting with the physical environment of their schools during structured or unstructured time, consciously or unconsciously. Yet not enough attention is paid to the importance of physical environment for learning. Often classrooms are overcrowded, with no alternative spaces to learn, nor are they attractive, inviting or sensitive towards children's needs. Inappropriate school design may drastically affect the teacher's productive output and classroom management. In fact, the role of this all - encompassing, physical environment has been restricted merely to shelter the educational activity.

When children are asked about the kinds of spaces they like, very often they want to be in a place that is colourful, friendly, and peaceful, with lots of open space offering with small nooks and corners, animals, plants, flowers, trees, and toys. In order to attract and retain children, the school environment must have all these elements in and around them.

Classrooms can be brightened up by first ensuring adequate natural light inside and then made lively by displaying children's work on the classroom walls as well as in different parts of the school. Drawings, art and craftwork put up on the walls and shelves send out a powerful message to children and their parents that their work is appreciated. These must be displayed at locations and heights that are physically and visually comfortably accessible to children of various ages. Many of our schools continue to function in dilapidated and dingy buildings, presenting a dull, drab and

Learning through the physical space:

Children perceive their world through multiple senses, especially the tactile and visual senses. A three-dimensional space can offer a unique setting for a child to learn because it can introduce a multiple sensory experience to accompany the textbook or blackboard. Spatial dimensions, textures, shapes, angles, movements and spatial attributes like inside – outside, symmetry, up – down, can be used to communicate some basic concepts of language, science, mathematics and the environment. These concepts can be applied to existing as well as new, to - be - built spaces.

√   *Classroom space: A window security grill can be designed to help children practise pre-writing skills or understand fractions; a range of angles can be marked under a door shutter on the floor to explain the concept of angles; or a classroom cupboard can be modified to be used as a library; or a ceiling fan can be painted with a range of colour wheels for children to enjoy the ever-changing formations.*

√   *Semi-open or outdoor space: The moving shadows of a flag-pole acting like a sundial to understand the different ways of measuring time; planting winter deciduous trees that shed their leaves in winter and are green in summer to make a comfortable outdoor learning space; an adventure playground could be developed here using discarded tyres; a counter space to simulate a bus/train/ post office/shop counter; an activity space for playing with mud and sand and making one's own mountains, rivers, and valleys in an outline map of India; or space exploration and discovery; space to explore three dimensions; or the outdoor natural environment with plants and trees that allow children to explore and create their own learning materials, colours, discover nooks and corners; grow a herbal garden; and actually see and practise rainwater harvesting.*

unstimulating physical setting. This can be changed with simple innovations, with the combined efforts of schoolteachers, administrators and architects.

Buildings are the most expensive physical assets of a school. Maximum educational value should be derived from them. Creative and practical solutions can be used to maximise this educational value while repairing or upgrading existing schools or making new buildings. The enhancement of the physical environment through this can bring about not just a cosmetic change but also an inherent transformation in the way that physical space connects with the pedagogy and the child. In many parts of the country, schools and classrooms have large permanent displays painted on the walls. Such visuals are over-stimulating, and with time they become monotonous and cease to enhance the quality of the space. Instead, smaller sized, judiciously chosen murals may be a better way of adding colour to the school. Most of the wall display area should be utilised for children's own work, or charts made by the teacher, and these should be replaced every month. Preparing such wall displays, and participating in putting them up, can be also valuable learning activities for children.

Many schools lack playgrounds for outdoor learning activities. This compromises the quality of learning provided through the curriculum.

Ensuring that minimum requirements of infrastructure and materials are available, and supporting flexible planning that will help achieve curricular aims are important features that heads of school, cluster and block functionaries should focus on in their support to teachers. This applies to almost all aspects of school life. The many new pedagogies that have been promoted through efforts such as the one suggested by DPEP — that the physical layout of the classroom could be altered so that children can sit together in small groups, or gather in a large circle for story telling,

> *'Class size' is an important factor that influences the choice of desirable methods and practices that the teacher uses in the process of curriculum transaction. National and international experiences have shown that a ratio higher than 1:30 is not desirable at any stage of school education. Way back in 1966, the Kothari Commission Report had warned that large classes would do 'serious damage to the quality of teaching' and that 'in crowded classrooms, all talk of creative teaching ceases to have any significance' (1966: p. 413 and 415).*

or sit on their own for carrying out some individual reading or writing tasks, or assemble in a group near the radio or TV for a broadcast. For this, the arrangement of desks and chairs, benches and *daris* could be altered. Many schools have begun to acquire simple furniture that is suitable for such flexible organisation. Single small *chowkis*, or desks and chairs for individual or pairs of children, and *daris* are well suited for such classrooms, and could be adapted or altered to suit the needs of children with disabilities. But still many schools invest in heavy metal benches and long desks, which can only be placed in rows, and which reinforce the teacher and blackboard-centred system of learning. Worse still, many of these do not have adequate place for children to keep their books and belongings, nor are they wide enough or with back support suitable for the physical comfort of the child. Such furniture should be banned from school spaces.

The maximum use can be made of available school and classroom spaces as pedagogic resources. In some areas, the walls of primary school classrooms

till the height of about 4 feet have been painted black so that they serve as a free slate and drawing board for children. In some schools geometric designs that can be used for activities are painted on the floor. A corner of the room may be used to organise learning materials, to keep some appropriate story books, puzzle or riddle cards, and other self-access learning materials. When some children finish their assigned lessons befor the allotted time, they should feel free to come and pick up something from this corner to occupy themselves.

Children can be encouraged to participate in activities to make the school and classroom attractive for study, work and play. Most government schools have the healthy practice of giving children the charge of cleaning, thereby encouraging the inclusion of work into the routine of the school. But it is also distressing to note that there are schools where it is the girls or children from the lower the castes who are expected to do this work. In elite schools, children do not take on any such responsibilities, and cleaning activities are often meted out as 'punishments' for misdemeanours. Such practices stem from and reinforce cultural norms of the division of labour, and the association of distasteful jobs with traditional hereditary occupations of lower – caste groups. As schools are public spaces that must be informed by the values of equality as well as respect for labour/work of all kinds, it is important that teachers consciously avoid distributing tasks on the basis of cultural notions. On the other hand, keeping the classroom clean and putting things in place are important curricular experiences through which children learn to take individual and collective responsibility and to keep their classrooms and schools as attractive as possible. The understanding of being part of a larger collective, and the abilities needed to work within a collective, can be internalised in children in a variety of ways as they interact in groups within the classroom and the school.

In fact, the structuring of infrastructural facilities is essential for paving the way for creating a learner - friendly and activity-centric context. Setting norms and standards, especially relating to space, building and furniture, would help in fostering a discerning sense of quality.

- **Space** Norms are related to age, to group size, the teacher – child ratio, and to the nature of activities to be carried out.

- **Building** Building materials, architectural styles and craftsmanship are also location-specific and culture-specific in relation to climate, ecology, and availability, while safety and hygiene are non-negotiable. Low-cost designs for toilets are plentiful, and the same standardised school building need not be found across India.

- **Furniture** Norms must be related to age and the nature of the activities, with preference given to the easily relocated, except in case of laboratories and other specialised spaces.

- **Equipment** Lists of essential and desirable equipment (including books) should be specified, emphasising the use of local materials and products, which may be culture specific, low cost, and easily available.

- **Time** The need for location and age-specific norms also apply to time tables and seasonal calendars.

4.2 NURTURING AN ENABLING ENVIRONMENT

As public spaces, schools must be marked by the values of equality, social justice and respect for diversity, as well as of the dignity and rights of children. These values must be consciously made part of the perspective of the school and form the foundation of school practice. An enabling learning environment is one where

'On an average, teachers and children spend around 6 hours a day, and over 1,000 hours a year, in school. The physical environment in which they go about their tasks must be congenial, providing a level of comfort, and offering a pleasant space to work in. For this, the school must have minimum facilities that include essential furniture, basic amenities (toilets, drinking water) and so on. There are a large number of schools in rural areas, especially in SC and tribal habitations, as well as in poor urban settlements, which have not been able to provide these basic facilities, although there are official norms for the same. Teachers, including the headmaster and the Village Education Committee or School Development and Monitoring Committee, need to be aware of the official norms of the state regarding the essential physical infrastructure and amenities. In places where they are not adequate, efforts need to be made for their provision so that the school routine proceeds with minimum discomfort. If the official response is not forthcoming or is delayed, local communities should lobby for these. With their involvement and willingness to make this effort fruitful, the school would assist teachers in concentrating on academic work.

children feel secure, where there is absence of fear, and which is governed by relationships of equality and equity. Often this does not require any special effort on the part of the teacher, except to practise equality and not discriminate among children. Teachers should also nurture their classroom spaces as places where children can ask questions freely, engaging in a dialogue with the teacher as well as their peers, during an ongoing lesson. Unless they can share their related experiences,

clarify their doubts and ask questions, they will not engage with learning. If, instead of ignoring children's comments or sealing their tongues with strict rules of silence and restrictions on the language to be used, teachers encourage children to talk, they would find that the classroom is a more lively place and that teaching is not predictable and boring, but rather an adventure of interacting minds. Such an environment will facilitate the self-confidence and self-esteem of learners of all ages; it will also go a long way in improving the quality of learning itself.

Teachers and children are part of the larger society where identities based on membership of caste, gender, religious and linguistic group, as well as economic status inform social interaction, though this varies in different social, cultural and regional contexts. SC and *ST* communities, members of minority groups, and women are usually placed in situations of disadvantage because of their identities, and are denied equal access to valued resources in society and participation in different institutions. Research on school processes suggests that identities of children continue to influence their treatment within schools, thereby denying them meaningful and equal opportunities to learn. As part of the experience of schooling, children also receive implicit messages through interpersonal relations, teacher attitudes, and norms and values that are part of the culture of the school. These often reinforce notions of purity and pollution in relation to social hierarchies, desirable qualities of 'masculinity' and 'feminity', and privilege in certain ways of living, mainly that of the urban middle class, while rendering all others invisible. Children belonging to SC and ST groups, and other socially discriminated against groups such as sex workers and parents with HIV, are often subjected to demeaning treatment in the classroom, not only by teachers but also by their peers. Girls are

often subject to stereotypical expectations based on notions of their future roles as wives and mothers rather than enabling them to develop their capabilities and claim their rights. Children with disability often confront insensitive environments where their needs are completely ignored. Schools must be conscious of the importance of creating equitable classroom environments in which students are not subjected to unfair treatment and denied opportunities on the basis of their sex or membership of a caste, tribe or minority group. On the other hand, the culture of the school must be one that highlights the students, identities as 'learners' and creates an environment that enhances the potential and interests of each child.

4.3 Participation of All Children

Participation by itself has little meaning. It is the ideological framework surrounding participation that defines it and gives it a political construct. For example, work participation within an authoritarian frame would give participation a very different form from participation within a democracy. Today, the participation of 'civil society' has become part of the rhetoric in developmental circles, but the nature of that civil society and the object of that participation have been moulded by a specific interpretation of what it means to be a citizen. Today, civil society participation has come to mean NGO participation, and attempts to enable the participation of individual citizens, for example, in local governance is posing a major challenge.

India is one of the largest and oldest democracies in the world; this curriculum framework is built on an understanding of this foundation. Education defines the fabric of a nation, and has the capacity to provide each child a positive experience of democratic functioning. Like the texture, colour, strength, and nature of each thread that is woven into a tapestry, each Indian child can be enabled to not only participate in a democracy, but to also learn how to interact and form partnerships with others to preserve and enhance democracy. It is the quality and nature of the interrelationships among individuals that determines the socio-political fabric of our nation. However, children are often socialised in to discriminatory practices. Children and adults learn from what they experience at home, the community and the world around them. It is important to recognise that adults socialise children within the dominant socio-cultural paradigm. This paradigm would include the role models that children see the mass media including television. This experience conditions their perceptions of caste and class, gender, democracy and justice. These perceptions, if and when reinforced by repeated experiences of the same kind, are converted into values. At a community level, when a group of people have the same experience and therefore share the same values, these values get converted into culture, and sometimes even ideology. This is a spiral, and each time the cycle is repeated the values and culture get reinforced unless there is a variation in the experience. The counter - experience needs to be strong and real enough to transform the earlier perceptions. Children cannot wake up one fine morning when they are 18 and know how to participate in, preserve and enhance a democracy, especially if they have had no prior personal or even second - hand experience of it, nor any role models to learn from.

The participation of children is a means to a much larger end, that of preserving and adding a new vibrancy to our culture of egalitarianism, democracy, secularism and equality. These values can be best realised through an integrated and well-designed curriculum that enables children's participation. The existing environment of unhealthy competition in schools

promotes values that are the antithesis of the values enshrined in our Constitution. A positive 'experience' of democracy and democratic participation must be provided both within and outside the school. This experience must actively engage children and young people in ways that encourage values of inclusion, eventually leading the way to the realisation of the vision of a participatory democracy.

Enabling democratic participation is also a means of empowering the weak and the marginalised. If India is to realise her dream of a nation based on egalitarianism, democracy and secularism, where all her citizens enjoy justice, liberty, equality and fraternity, enabling the participation of children would be the most fundamental step in this process. Enabling learning through participation in the life of a community and the nation at large is crucial to the success of schooling. The failure to provide this will result in the failure of the system, and hence needs to be treated as the utmost priority. It is not only as essential as the teaching of mathematics and science, but takes on even greater importance as an indispensable component of all disciplines. It is a running theme, and has to be integrated into all learning processes and arenas, and given top priority in the development of all curricula and syllabi.

4.3.1 Children's Rights

India has signed the Convention on the Rights of the Child (CRC). The three most important principles of this Convention are the rights to participation, to association or the right to organisation, and the right to information. These are essential rights if children and youth are to realise all their other rights. CRC does not concern itself only with the protection of children and the delivery or provision of services and programmes, but also ensures that children have the right to determine the quality and nature of these services and

programmes. Moreover, all the articles of the CRC have to be seen within the overarching principle, that

√ *Inclusive education is about embracing all.*

√ *Disability is a social responsibility — accept it.*

√ *No selection procedures to be adopted for denying admission to learners with disabilities.*

√ *Children do not fail, they only indicate failure of the school.*

√ *Accept difference... celebrate diversity.*

√ *Inclusion is not confined to the disabled. It also means non-exclusion.*

√ *Learn human rights ... conquer human wrongs.*

√ *Handicap is a social construct, deconstruct handicap.*

√ *Make provisions — not restrictions; adjust to the needs of the child.*

√ *Remove physical, social and attitudinal barriers.*

√ *Partnership is our strength such as*

  school – community; school – teachers; teachers – teachers; teachers – children; children – children; teachers – parents; school systems and outside systems.

√ *All good practices of teaching are practices of inclusion.*

√ *Learning together is beneficial for every child.*

√ *Support services are essential services.*

√ *If you want to teach, learn from the child. Identify strengths not limitations.*

√ *Inculcate mutual respect and inter-dependence.*

of upholding and preserving the best interests of children.

Although CRC guarantees children the right to express their views freely in all matters affecting them, and to exercise freedom of expression, children are frequently denied the opportunity to participate in decision-making processes and activities that effect their lives and futures. The right to participation also depends on the realisation of other primary rights such as access to information, the freedom of association, and the right to formulate opinions free from influence and coercion. The principle of participation should be integrated into all areas of concern for children.

In reality, social, political and economic structures are still very much hierarchical; children and youth are the most marginalised sections of society; their effective participation depends largely on the extent to which they are given the opportunity to organise themselves. Coming together gives them visibility, strength and a collective voice. The participation of individual, 'hand-picked' children or youth is fraught with discrimination, and is ineffective because such 'representatives' represent no one but themselves; it excludes the less vocal and less visible; and it gives more room for manipulation.

On the other hand, the organised participation of children and youth, especially the more disadvantaged children, gives children strength, access to more information, confidence, an identity and ownership. Individual children or youth representing such groups voice the views and aspirations of the collective. Their coming together also enables them to find collective ways to solve problems. However, what needs to be ensured is that all children and youth have an equal right to participate in the development of this collective voice.

4.3.2. Policy of Inclusion

A policy of inclusion needs to be implemented in all schools and throughout our education system. The participation of all children needs to be ensured in all spheres of their life in and outside the school. Schools need to become centres that prepare children for life and ensure that all children, especially the differently abled, children from marginalised sections, and children in difficult circumstances get the maximum benefit of this critical area of education. Opportunities to display talents and share these with peers are powerful tools in nurturing motivation and involvement among children. In our schools we tend to select some children over and over again. While this small group benefits from these opportunities, becoming more self - confident and visible in the school, other children experience repeated disappointment and progress through school with a constant longing for recognition and peer approval. Excellence and ability may be singled out for appreciation, but at the same time opportunities need to be given to all children and their specific abilities need to be recognised and appreciated.

This includes children with disabilities, who may need assistance or more time to complete their assigned tasks. It would be even better if, while planning for such activities, the teacher discusses them with all the children in the class, and ensures that each child is given an opportunity to contribute. When planning, therefore, teachers must pay special attention to ensuring the participation of all. This would become a marker of their effectiveness as teachers.

Excessive emphasis on competitiveness and individual achievement is beginning to mark many of our schools, especially private schools catering to the urban middle classes. Very often, as soon as children join, houses are allocated to them. Thereafter, almost every activity in the school is

counted for marks that go into house points, adding up to an end-of-the-year prize. Such 'house loyalties' seem to have the superficial effect of getting all children involved and excited about winning points for their houses, but also distorts educational aims, where excessive competitiveness promotes doing better than someone else as an aim, rather than excelling on one's own terms and for the satisfaction of doing something well. Often placed under the monitoring eye of other children, this system distorts social relations within schools, adversely affecting peer relations and undermining values such as cooperation and sensitivity to others. Teachers need to reflect on the extent to which they want the spirit of competition to enter into and permeate every aspect of school life— performing more of a function in regulating and disciplining than in nurturing learning and interest.

Schools also undermine the diverse capabilities and talents of children by categorising them very early, on narrow cognitive criteria. Instead of relating to each child as an individual, early in their lives children are placed on cognitive berths in the classroom: the 'stars', the average, the below - average, and the 'failures'. Most often they never have a chance to get off their berth by themselves. The demonising effect of such labelling is devastating on children. Schools go to absurd lengths to make children internalise these labels, through verbal name calling such as 'dullard', segregating them in seating arrangements, and even creating markers that visually divide children into achievers and those who are unable to perform. The fear of not having the right answer keeps many children silent in the classroom, thus denying them an equal opportunity to participate and learn. Equally paralysed by the fear of failure are the so-called achievers, who lose their capacity to try out new

things arising from the fear of failure, doing less well in examinations, and of losing their ranks. It is important to allow making errors and mistakes to remain an integral part of the learning process and remove the fear of not achieving 'full marks'. The school needs to send out a strong signal to the community, parents who pressurise children from an early age to be perfectionists. Instead of spending time in tuitions or at home learning the 'perfect answers', parents need to encourage their children to spend their time reading storybooks, playing and doing a reasonable amount of homework and revision. Instead of looking for courses on stress management for their pupils, school heads and school managements need to de-stress their curricula, and advise parents to de-stress children's life outside the school.

Schools that emphasise intense competitiveness must not be treated as examples by others, including state-run schools. The ideal of common schooling advocated by the Kothari Commission four decades ago continues to be valid as it reflects the values enshrined in our Constitution. Schools will succeed in inculcating these values only if they create an ethos in which every child feels happy and relaxed. This ideal is even more relevant now because education has become a fundamental right, which implies that millions of first-generation learners are being enrolled in schools . To retain them, the system — including its private sector — must recognise that there are many children that no single norm of capacity, personality or aspiration can serve in the emerging scenario. School administrators and teachers should also realise that when boys and girls from different socio-economic and cultural backgrounds and different levels of ability study together, the classroom ethos is enriched and becomes more inspiring.

4.4 DISCIPLINE AND PARTICIPATORY MANAGEMENT

The pupils 'own' the school as much as the teachers and headmasters, especially in government schools. There is a relationship of interdependency between the teacher and the pupils, especially in this era where learning transaction is based on access to information, and knowledge creation is based on a foundation of resources of which the teacher is the pivot. One cannot function without the other. Educational transaction has to shift from the benefactor (teacher) and the beneficiary (pupil) to a motivator and facilitator and learner, all of whom have rights and responsibilities in ensuring that educational transaction takes place.

At present, school rules, norms and conventions define permitted 'good' and 'proper' behaviour for individual and groups of students. Maintaining discipline in schools is usually the prerogative of teachers and adults in positions of authority (often the sports master and administrators). Frequently, they also induct children as 'monitors' and 'prefects' and delegate the responsibility of maintaining 'order' and ensuring control. Punishment and reward play an important role in this. Those who implement rarely question the rules, or the implications that ensuring compliance may have for children's overall development, self-esteem and also their interest in learning. Forms of disciplining such as corporal punishment and, verbal and non-verbal abuse of children, continue to feature in many schools, and are used to humiliate children in front of their peers. Yet many teachers and even parents still believe that such punishment is important, unaware of the immediate and long-term detrimental effects of these practices. It is important for teachers to reflect on the rationale that underlies the rules and conventions that govern schools, and whether these are consistent with our aims of education. For instance, rules such as the length of socks and the whiteness of sports shoes are of no educationally defensible importance. Rules regarding maintaining silence in classrooms, answering 'one at a time', and answering only if you know the right answer, can undermine the values of equality and equal opportunity. Such rules may also discourage processes that are integral to children's learning, the development of a sense of community among peers, though they may make the class 'easy to manage' for the teacher and facilitate 'covering the syllabus'.

Inculcating the value/habit of self-discipline is important for the systematic pursuit of learning and the development of the child's interests and potential. Discipline must enable the performance of, and be conducive to, the task at hand. It should enable freedom, choice and autonomy for both teacher and child. It is necessary to involve children themselves in evolving rules, so that they understand the rationale behind a rule, and feel a sense of responsibility in ensuring that it is followed. In this way they would also learn the process of setting codes of self-governance and the skills required to participate in decision making and democratic functioning. Similarly, the children themselves could also evolve mechanisms for conflict resolution between teachers and students, and among students. The teacher should ensure that there are as few rules as possible, and that only rules that can be reasonably followed are created. It does no one any good to humiliate children for breaking rules, particularly when there are good reasons for the rule being broken. For instance, 'noisy classrooms' are frowned upon by teachers as well as headmasters, but it is possible that rather than the noise being evidence of the teacher not being in control, it may be evidence of a lively and participatory class.

Similarly, headmasters can be unreasonably strict about punctuality. A child who is late for an examination on account of a traffic jam must not be penalised, and yet we find such rules being imposed in the name of higher values. Unreasonableness on the part of authorities in such matters can demoralise children, their parents, and also teachers. It may help to remember to first ask a child why he or she broke a rule, to listen to what the child says, and act accordingly. It is befitting a school head or teacher to exercise authority rather than power. Arbitrariness and unreasonableness are characteristics of power, and are feared, not respected. Systems for the participatory management of the school by children and schoolteachers and administrators need to be evolved. Children should be encouraged to elect their own representatives to children's councils, and similarly the teachers and administrators of a given school need to be organised themselves, so also the parents.

4.5 SPACE FOR PARENTS AND THE COMMUNITY

The school is a structured space for guided learning, but the process of constructing knowledge is a continuous one, which goes on even outside the school. If learning is continuous, and takes place in arenas other than the school, such as home, the workplace, the community, etc., then school assignments or homework should be planned differently. It need not depend on parents reinforcing what the school has already done. It could set different kinds of activities for children to do, on their own or with their parents. This could also provide opportunities for parents to understand a little more about what their child is learning in the school and give children the initial impetus to explore and recognise the world outside the school as an arena for learning.

Schools could also invite the community into their premises, and give the larger world outside a role in influencing the curricular process. Parents and community members could come into the school as resource persons to share their knowledge and experiences in relation to a particular topic being studied. For example, for a lesson on machines, local mechanics could talk about sharing their experiences on repairing and also talk about how they learnt to repair vehicles.

1. The participation of the community in the child's world of education and learning should allow for the community to:

    a. Transfer oral history (dealing with folklore, migration, environmental degradation, traders, settlers, etc.) and traditional knowledge (sowing and harvesting, monsoons, processes related to traditional crafts, etc.) to children, while the school encourages critical reflection wherever it is required

    b. Influence the content of subjects and add local, practical, and appropriate examples

    c. Support children in their exploration and creation of knowledge and information

    d. Support children in their practise of democracy through their participation in information generation, planning, monitoring and evaluation with local governments and schools

    e. Monitor the realisation of children's rights as well as violations of these rights

    f. Participate in addressing the constraints faced by children

    g. Participate in setting criteria for vocational training

    h. Enable the village to become a learning environment for children realising the concept of the 'village as a school'.

Similarly, while helping children to use their home language and make a transition to the school language,

teachers may seek inputs from local language speakers to facilitate communication in the mother tongue(s), teaching of languages and creating material. The choice would depend upon the particular curricular plan adopted and the kinds of expertise that are available and accessible. The school must explore opportunities for active engagement by parents and the community in the process of learning. This relationship will help in sharing the content and pedagogy of institutionalised learning.

All schools need to look for ways in which parental participation and involvement can be encouraged and sustained. Many schools do not treat parents' questions and concerns regarding the activities of the school as valid questions. Frequently, private schools turn parents into mere consumers and ask them to take away their wards if they do not like something that the school is doing. Others treat poor parents as not having any legitimate stand when they come to make enquiries about their wards. Both types of attitudes are disrespectful of parents and their legitimate concern for their children.

Overall, in order to make the school environment supportive of children, and to strengthen the relationship of the school with parents and the local community, there are institutionalised structures such as parent-teacher associations, local - level committees, and also alumni associations in some schools. In events held to celebrate national festivals and other occasions such as cultural day and sports day, most schools invite parents to participate. By inviting alumni and local residents also, the importance of the school as a community site can increase. Community involvement can also be sought for maintaining the school and its facilities. There are examples of local contributions for building school boundary walls, augmenting facilities, and so on. However, community participation must not mean the economic burdening of poor families. On the other hand, there can be an understanding that school space can be shared with the community for local events and that there will be some collective responsibility in maintaining its premises.

4.6 Curriculum Sites and Learning Resources

4.6.1 Texts and Books

Popular perception treats the textbook as the prime site for curriculum designing. Though curriculum planning is a much wider process, curriculum reform seldom goes beyond changing the textbook. **Improved textbooks** that are carefully written and designed, professionally edited and tested, offering not merely factual information but also interactive spaces for children are important. But curricular reform can go much farther if textbooks are accompanied by several other kinds of materials. Subject **dictionaries,** for instance, can relieve the main textbook from becoming encyclopaedic, burdened by carrying definitions of technical terms, and instead allow the teacher to focus on understanding concepts. The triangular relationship between high-speed classroom teaching, heavy homework and private tuition, which is a major source of stress, can be weakened if textbook writers focus on elaboration of concepts, activities, spaces for wondering about problems, exercises encouraging reflective thinking and small-group work, leaving the definition of technical terms to a subject dictionary.

Supplementary books, workbooks, and extra reading come next. In certain subjects, such as languages, the importance of such material needs no fresh recognition, but the concept of such material does call for fresh thinking. Current textbooks contain uninteresting content covering different genres, and workbooks simply repeat exercises of the type already

found in textbooks. In mathematics, and the natural and social sciences, such supplementary materials still need to be developed. Such books could draw children's attention away from the text to the world around them. Indeed, for subjects like art, workbooks may form the main classroom material. There are fine examples of such materials produced for the study of the environment, introducing children to the observation of trees, birds and the natural habitat. Such resources need to become available to the teacher and for use in the classroom.

Atlases have a similar role to play in enriching the child's understanding of the earth, both as a natural and as a human habitat. Atlases of stars, flora and fauna, people and life patterns, history and culture, etc. can greatly enlarge the scope of geography, history and economics at all levels. Posters on these areas of knowledge, as well as other matters of concern on which general awareness needs to be promoted, can also enhance learning. Some of these concerns include gender bias, inclusion of children with special needs, and Constitutional values. Such material could be available in a resource library and at the cluster level to be borrowed by schools for use, or they could be placed in the school library, or made available by teachers.

Manuals and resources for teachers are just as important as textbooks. Any move to introduce a new set of textbooks or a new kind of textbook should include the preparation of handbooks for teachers. These handbooks should reach principals and teachers before the new textbooks do. Teachers' handbooks can be designed in many different ways. They need not cover the content of the textbook chapter-wise, though that can be one of the approaches. Other formats can be equally valid: offering a critique of established methods and suggesting new ones, and including lists

of resource materials, audio and video materials and sites on the Internet. These would provide tips for teachers, which they could use for lesson planning. Such source books need to be available during in - service training of teachers and during meetings when they plan their teaching units.

Vertically organised group classrooms (multigrade or multiability) require a shift away from textbooks designed for monograde classrooms, which assume that all children are being addressed by the teacher together and that they are all at the same stage and are all expected to do the same thing. Instead, there is a need for alternative types of materials to be made available to teachers as a basis of planning lessons and units:

- Thematic lesson with a variety of exercises and activities at different levels for different groups.

- Graded self - access materials that children can engage with on their own with minimum scaffolding from the teacher, allowing them to work on their own or with other children.

- Whole - group activity plans, say, storytelling or performing a small drama, based on which children can do different activities. For example, all children from Classes I to V may enact the folk story of the rabbit and the lion together, and after this Groups I and II may work with flashcards with the names of various animals; Group III and IV may make a series of drawings and then write out the story against each drawing, working in small groups; and Group V may rewrite the story, suggesting alternative endings to it. Without the support of appropriate materials, most teachers find themselves trying to juggle monograde class groups, with the result that for the majority of children, time on the task becomes very low.

4.6.2 Libraries

School libraries have been a subject of policy recommendations for a long time, but a functioning library in the school continues to be a rarity. It is important that future planning treats the library as an essential component of the school at all levels. Both teachers and children need to be motivated and trained to use the library as a resource for learning, pleasure, and concentration. The school library should be conceptualised as an intellectual space where teachers, children and members of the community can expect to find the means to deepen their knowledge and imagination. A system of cataloguing books and other materials available in the library needs to be developed so that children can become self-reliant library users. Apart from books and magazines, a school library should provide access to the new information technology to enable children and teachers to connect with the wider world. In the initial stages of planning, block-level or cluster-level libraries can be set up. In the future, India must move towards equipping every school, irrespective of its level, with a library. In many parts of the country, community libraries are functioning in rural areas, and government libraries exist in many district headquarters. Futuristic planning would require the amalgamation of such structures in a school library network in order to maximise the use of resources. The Raja Ram Mohan Roy Library Foundation can be given additional resources to act as a nodal agency for conceptualising a library network for schools and for monitoring it after it has been created.

In the day-to-day life of a school, the library can serve many different kinds of purposes. Restricting the use of the library to one period a week seldom allows children to cultivate a taste for reading. Facilities are to be provided to allow children to borrow books.

> ## Libraries
>
> *One period a week to be devoted to library reading. During this time, children sit and read silently in the library. They return the books borrowed the previous week and borrow new ones.*
>
> *If there is no library room, the teacher can bring out books appropriate to the age group and allow children to choose from the set. It is important to let the child choose rather than having the teacher distribute the books.*
>
> *Library books can be brought into the language class.*
>
> *For class projects, children can be asked to look up a reference in the library.*
>
> *Children can be asked to write about the book they have read that week during the language class.*
>
> *Children can be asked to share a story they have read with the other children in class.*
>
> **The school library should be kept open during vacations.**

Training of teachers in library management and use is required to meet the demands of this situation. Where the size of the school building permits a separate room for the library, it is important to pay attention to creating a positive ethos in this space by providing good lighting and seating arrangements. It should even be possible for a teacher to conduct a class in the library by drawing upon its resources. It could also serve as a place for holding discussions, watching a craftsman from the community giving a demonstration, or listening to a storyteller. Creating such resource libraries to support teachers at the cluster and block levels will complement and strengthen curriculum renewal. Each block could

specialise in a subject area so that together there are adequate resources in the district.

4.6.3 Educational Technology

The significance of Educational Technology (ET) as a site for curriculum planning has been widely recognised, but detailed guidelines and strategies for its educationally optimum use have not yet been worked out. Generally, technology has been used as a medium to disseminate information, and as a way of addressing the scarcity of good teachers—usually the consequence of poor recruitment policies. ET, which is used to redress the problem of quality of teaching, can

> *For primary school children, video simulations and demonstrations cannot substitute for hands-on experiences and learning.*

only exacerbate the disillusionment of teachers with teaching. If ET is to become a means of enhancing curricular reform, it must treat the majority of teachers and children not merely as consumers but also as active producers. There must be widespread consultation regarding use during development and implementation. ET facilities need to be used at all levels of schools — cluster and block resource centres, district, state and national level institutions — in order to provide hands-on experience in using ET. Such experiences provided to children, teachers and teacher educators, could include something as simple as the audio-recording of an interview with a village elder, to making a video film or a video game. Providing children more direct access to multimedia equipment and Information Communication Technology (ICT), and allowing them to mix and make their own productions and to present their own experiences, could provide them with new opportunities to explore their own creative imagination.

Such an experience of ET production, rather than only watching and listening to programmes in a passive

way, can lay the foundation for far better utilisation of the country's enormous ET facilities. Interactive, Net - enabled computers, rather than only CD-based computer usage, would facilitate a meaningful integration of computers and enhance the school curriculum in rural and remote areas by increasing connectivity and enhancing access to ideas and information. It is such two-way interactivity rather than one-way reception that would make technology educational.

Rather than trying to reproduce and mimic classroom situations, or teaching the textbook content, or animating lab experiments, ET could realise far better potential if topics are taken up but developed into non-didactic explorations, leaving learners free to relate to the knowledge web progressively, and learn at their own levels of interest. Such access to knowledge in regional languages is still very limited, and is one of the main reasons for the persistent and growing divide between learners from urban and rural schools, and learners from regional - language and English - medium schools. The potential of such encyclopaedias and documentaries for children is still underdeveloped. Materials such as textbooks, workbooks and handbooks for teachers can be designed with the awareness of existing stocks of good-quality audio or video material and sites where extra resources are available on the Net. Classics of cinema need to be made accessible through such measures. For instance, a child studying about village life should have easy access to Satyajit Ray's classic, *Pather Panchali,* either as a CD to be borrowed from the CRC or to be viewed on a nationally managed website. Future textbooks need to be conceptualised

and designed in ways that might integrate knowledge in different subjects and experiences, thus facilitating the assimilation of knowledge. For instance, a middle - school textbook that discusses the history of Rajasthan and mentions Meera should be able to offer the text of a *bhajan* composed by her, and also refer to a source where that *bhajan* has been archived, so that children can listen to M.S. Subbulakshmi singing it.

Integration of knowledge and experience along these lines would take away the sense of burden and boredom that our present-day education induces. In science and mathematics, and in teaching children with disabilities, the potential of ET, including IT, is widely appreciated. It is important to realise this potential in achieving curricular goals, with more age-specific planning on the use of ET. Governments and other agencies responsible for financial planning need to take this fuller range of ET's demands and benefits.

4.6.4 Tools and Laboratories

Equipping the school with tools that are necessary for art and craft work is an imperative. These curricular areas can contribute to achieving the aim of making the school space a creative space, only if we can mindfully plan for resources. The heritage crafts require, in their weekly or fortnightly cycles of routine, tools and instruments such as looms, lathes, scissors and embroidery frames, depending on the craft. It is important not to let this sector of curricular planning suffer from gender or caste bias, or else one of its key promises will be lost, namely, the promise of promoting a culture of active engagement with one's material and human environment, with imagination and cooperation. The same is true for the arts, which in addition to being integrated into other curricular areas would also need specialised materials and tools. The opportunity to handle tools and acquire dexterity in using them, and

also learning to take care of and maintain them, are invaluable experiences for all children. Investment in training of the child's senses and faculties with the help of the arts plays a vital role in strengthening literacy and developing a culture of peace.

Schools, particularly those in rural areas, are poorly equipped with science labs, or equipment for mathematical activities. The absence of such facilities drastically narrows subject options for children, denying them equal opportunities for learning and future life chances. It is hence important that resources are made available for laboratories with adequate facilities in schools. While elementary schools can benefit from a science and mathematics corner, secondary and higher secondary schools require well-equipped laboratories.

4.6.5 Other Sites and Spaces

Sites of curriculum that are physically located outside the school premises are just as important as the ones discussed so far. These are sites like local monuments and museums, natural physical features such as rivers and hills, everyday spaces such as marketplaces and post offices. The teacher's ability to plan the school schedule in a manner that permits imaginative use of such resources directly affects the quality of education that children might receive at a school. Restriction of classroom activities to what is written in the textbook implies a serious impediment to the growth of children's interests and capabilities. Quite a few such impediments result from the rigid observation of the school's daily or annual routine. The night sky is not available for the study of stars simply because the school does not open its gates or allow access to its roof at night. Watching the setting sun or observing the arrival of the monsoon in June fall outside the school's timetable. Exchange visits between schools in different parts of the country, and even the neighbouring SAARC

countries, could become important ways of promoting mutual understanding.

Teachers and educational administrators would have to join hands to release the system from such rigidities. In addition, syllabus makers and the writers of textbooks and teachers, handbooks would also have to get into the details of the planning of learning activities, which would widen the scope of the curriculum. This would require breaking away from the mindset that excursions and activities related to the arts and crafts are 'extra-curricular'.

4.6.6 Need for Plurality and Alternative Materials

The pluralistic and diverse nature of Indian society definitely makes a strong case for preparing a variety of not only textbooks but also other materials, so as to promote children's creativity, participation and interest, thereby enhancing their learning. No one textbook can cater to the diverse needs of different groups of students. Further, the same content/concept can be taught in different ways. Schools, government or private, could have the choice of textbooks to follow for different subjects. Boards or textbook bureaus could consider developing more than one series of books, or even endorsing books published by other publishers, and allowing schools to choose from a range. As far back as 1953, the Report of the Secondary Education Commission made a number of recommendations for removing the defects in textbooks, wherein it was pointed out that: "No single textbook should be prescribed for any subject of study, but a reasonable number of books which satisfy the standards laid down should be recommended, leaving the choice to the school concerned". In its section on the Essentials for Curricula Development, the Kothari Commission Report emphasised that the curricular revision had

Any experience that the teacher regards as necessary for the child's development is curricular, irrespective of how or where it is organised. This reconceptualisation of the curriculum can be accomplished only if it receives the understanding, support and acceptance of official authorities.

been of an ad-hoc character and that the curriculum is prepared at the state level and prescribed uniformly for all schools. Such procedures undermine the agency of teachers and head teachers, and render the spirit of exploration and innovation impossible. The Report categorically stated that basic to the success of any attempt at curriculum improvement is the preparation of suitable textbooks, teachers, guides and other kinds of learning resources.

4.6.7 Organising and Pooling Resources

Teaching aids and other materials, as well as books, toys and games, help make school interesting for children. In some states of the country, good use has been made of the funding assistance through DPEP and other programmes for acquiring and developing teaching-learning materials. A lot of ready-made materials do exist, and teachers, cluster and block - level resource persons need to become better acquainted with the range of materials available and ways of using them. There are also many new kinds of printed materials for teachers and children being produced by NGOs and small entrepreneurs. In addition, there are locally available materials that cost little but which are very useful for keeping in a classroom, especially in the primary school grads. Teachers need to explore various types of raw materials that can be used to make teaching aids that will last

year after year, so that the precious time they invest in making these things is put to good use. Styrofoam and cardboard are neither strong enough nor attractive for this purpose. Other materials such as rexine, rubber and cloth are interesting alternatives.

Other kinds of resource materials, such as maps and picture folders, and specific equipments could be shared among schools if they are placed in the cluster centre, which can then serve as a resource library so that for the period of teaching the teacher borrows materials from the cluster and thereafter returns them to the cluster to enable some other teachers to borrow them. In this way, the resources gathered by one teacher can also be utilised by others, and it would become possible to have multiple sets necessary for the whole class to use.

The availability of such resources depends on the funds available and the member of schools that need assistance. How can the school build such resources? Some government programmes, for instance, Operation Blackboard, have laid down norms for the minimum materials that should be available in each Primary and Upper Primary school. Similarly, there are new schemes that allow for cycles and toys to be purchased for a cluster of schools. Schools could benefit from these opportunities, and also explore the possibilities that are available at the local level for augmenting their teaching-learning and play material. There is a growing emphasis on Educational Technology for 'effective' learning. Some schools are now being equipped with computers, and in some areas radio and TV-based instruction is being introduced.

Ultimately, the use of such materials requires planning if it is to be effective and become a part of the overall plan to enhance participation and understanding. Teachers would need to prepare and

plan if the materials he/she introduces into the classroom are for the purpose of demonstration. If an activity is being planned, then there must be enough sets for everyone in the class to use, individually or in small groups. If only one child is able to handle materials while all the others watch, it is a waste of learning time.

Laboratories have always been talked about as a part of science teaching in middle and high school. Yet these are still not available on the scale required. As a part of the effort to provide all children with the necessary hands - on experience of equipment and experiments given in their science curriculum, at least at the cluster level, the resource centre may serve as a clusterlab. Schools in the cluster could plan their timetable so that for half a day, once a week, their science lab class is held at the cluster - level lab. Craft labs too could be developed at least at the cluster or block levels in order to facilitate access to better equipment.

In engendering a culture of learning, not only the classroom but also in the space of the school itself and the world outside, the school could become the landscape in which a range of activities are organised. Teachers can devise activities, projects and studies, both drawing from textbooks and going beyond them, to encourage children to explore, investigate and construct knowledge.

4.7 TIME

Earlier documents have all included a section on recommendations on instructional time. Important concerns that we endorse from earlier documents include the need for the system to ensure that the total number of instructional days are not compromised, and that the total number of days for the curriculum should be 200 days as recommended in NCF-1988. Within this, we suggest ways in which we can work

out possibilities and methods for enriching the total time spent by each child in school from the point of view of learning.

The school annual calendar is currently decided at the state level. Several suggestions have been made in the past that the annual calendar could be planned at a more decentralised level, so that it is closer to the calendar of local activities and climate/weather. The plan for such calendars could be decentralised to the district level, and decided in consultation with the *zilla panchayats*.

Considerations for making any required changes could be based on local weather conditions. For example, where monsoons are very heavy and areas are prone to flooding, it is better for schools to remain closed and have a vacation period at that time. Parents in some areas ask schools to function during summer months as it is too hot to go out even to play. There are also areas where parents would prefer that the vacation coincides with at the time of harvest so that children can participate in the family occupation. Such adjustments would permit children to learn from the world in which they live which by acquiring important lifeskills and attitudes, instead of forgoing their lives in the local community and becoming alienated from it for the sake of attending school. Local holidays could be decided at the block level. The scheduling of various school events would need to be planned by all school faculty together, along with inputs from the village/school education committee. Thematic learning across the school grades and excursions would also need to be planned in advance.

Needless to say, we need to safeguard against the misuse of such flexibility. Not all communities are benign spaces for children. It would go against the educational aims of the school if the community takes advantage of such flexibility to perpetuate

*The concept of **time on task** is an essential reckoner for taking stock of the total time that children spend actively on learning. This would include time spent on listening, reading, writing, doing activities, discussing, etc. It would not include waiting for one's turn, copying from the board or revising. Particularly in multigrade classes, planning and designing of learning activities for children need to ensure that children's time on task is maximised.*

Total study time that is expected from students in both face-to-face and self-study or homework needs to be accounted for while planning the syllabus or course of study for students, especially as they go into higher grades.

Total homework time

Primary: No homework up to Class II and two hours a week from Class III.

Middle school: One hour a day (about five to six hours a week).

Secondary and Higher Secondary: Two hours a day (about 10 to 12 hours a week). Teachers need to work together to plan and rationalise the amount of homework that they give children.

cultural practices that are discriminatory or stereotype children along the lines of gender, religion or caste. It also could lend itself to children getting drawn into child labour. Children have a right to leisure and to play, and have time for themselves. Some local traditions and cultures are supportive of such a childhood, others less so. Often girls are burdened from an early age with domestic chores. Increasingly children are under great pressure to study, and are

placed in tuition classes before and after school, and hence they get little time to play. Schools must engage with children's families and their communities in a continuous dialogue to argue for and protect these rights of children.

The **timings of the school day** could be decided at each school level, in consultation with the *gram panchayat*, keeping in mind issues such as how far children need to travel to get to school. This flexibility is suggested only in order to facilitate children's participation in school. While saying this, we strongly maintain that the time spent in school itself, and on learning in the school, cannot be in any way compromised or reduced below six hours a day (and

three hours for the ECCE period). Where teachers and children travel to school from a far - off place, it would befit the overall societal concern for children if bus timings are changed to enable teachers and students to reach the school and leave at a convenient time, instead of compelling them to routinely come late and leave early.

The school day, week, month, term and year need to be planned for as a **mixture of routine and variation,** as children need a little of both, and the kinds of learning we would like them to experience have different requirements. We share some organisational ideas that could form the basis for planning and enriching children's time spent in school, and also some aspects that relate to institutional arrangements for the same.

In most schools, the day begins with a **morning assembly,** when the entire school gathers to do things together. This time can be used for reading the headlines of the morning newspaper, performing some physical exercises and singing the national anthem. Other activities could also be added, for example, singing together, or listening to a story, or inviting a person from the local community or an outside guest to speak to the children, or hold small events to mark some significant local or national happening. Classes that have undertaken some interesting projects could also use this time to share their work with the whole school. If not everyday, such longer morning assemblies could be planned once or twice a week. In composite schools, depending on the theme, a junior school assembly and a senior school assembly could be held separately. News headlines that are significant, for example, the bus journey to Muzaffarabad, could provide a theme for a special session on that day, and be woven into the curriculum.

Morning Assembly

The day begins with teachers and children getting the school and class rooms ready for the day ahead. Cleaning the rooms, including the toilets, putting up display boards in the classrooms, organising materials and getting equipment, all these activities conveys a sense of ownership among students and teachers and foster a sense of responsibility towards the material and space they use. This also gives them time to talk to each other and catch up on the events of the previous day. This reduces the need for such talk during class time.

During the general assembly, everybody sits together, not according to their classes or in lines, but younger ones in front and older ones behind. One day a week they listen to an inspiring story. On another day they listen to music, a guest talk, or share a moving experience, read out and discuss an interesting report from the newspaper. Then everyone goes to class.

In most documents, a **period** has been presented as a basic unit of 45 minutes of teaching-learning in the timetable. Frequently, however, this is compromised into 30 to 35 minutes, which cannot constitute a meaningful length to engage with learning. A period can, in general, serve as an organisational unit for many text-based lessons.

But there is also a need for the school timetable to allow for other kinds of longer periods lasting an hour, or one and a half hours (a double period), for other kinds of activities such as craft or art work, projects, and lab work. Such lengths of time are also essential for undertaking cross-subject integrated learning, and for effective group work. Needless to say, in a multigrade class situation, the teacher needs a more flexible way of planning for children's learning time in sessions that are teacher led, those that are self-directed, those in which two or more grades could be combined, etc. While certain subject areas such as language and mathematics need learning time everyday, others do not. The weekly time table could allow for variation from the regular routine but should be balanced over the week. It is essential to take stock of the time spent in learning different subject areas and to introduce corrections if the teacher finds that more or less time is being spent or is needed, than originally foreseen/planned.

4.8 TEACHER'S AUTONOMY AND PROFESSIONAL INDEPENDENCE

Teacher autonomy is essential for ensuring a learning environment that addresses children's diverse needs. As much as the learner requires space, freedom, flexibility, and respect, the teacher also requires the same. Currently, the system of administrative hierarchies and control, examinations, and centralised planning for curriculum reform, all constrain the autonomy of the headmaster and teacher. Even when there is curricular freedom, teachers do not feel confident that they can exercise it without being taken to task by the administration for doing things differently. It is therefore essential to enable and support them in exercising choice. As much as the classroom needs to nurture a democratic, flexible and accepting culture, so also the school institution and the bureaucratic structure need to do the same. Not only should the teacher receive orders and information, but equally the voice of the teacher should be heard by those higher up, who often take decisions that affect the immediate classroom life and culture in the school. Relationships between teachers and their heads and principals must be informed by equality and mutual respect, and decision making must be on the basis of dialogue and discussion. The annual, monthly and weekly calendars of activities need to provide time for such staff interactions for reviewing and planing. There is a need to encourage an atmosphere that facilitates collaborative efforts among teachers. There must also be mechanisms for conflict resolution.

Often technologies such as radio and TV are introduced into their classrooms without consulting teachers on whether they would like to have these and what they would like these to do for them. Once these there in the classroom, teachers are expected to use them, when they have no control over what will be delivered, or how it will integrate with their own teaching plans.

4.8.1 Time for Reflection and Planning

• On a daily basis (at least 45 minutes) to review the day, make notes on children to follow up the next day, and organise materials for the next day's lessons (this is in addition to the

time that they may need to correct homework).

- On a weekly basis (at least two/three hours) to take stock of learning, to work out details of activities and projects proposed, and to plan a group of lessons (unit) for the coming week.

- On a monthly/term basis (minimum of one day) to review their own work, children's learning, and map the contours of the learning activities planned for the groups they teach.

- At the beginning and the end of the year, two or three days each need to be allocated to evolve an annual plan for the school, in which they locate activities such as local holidays, annual events (national events, sports days, cultural events) and days for parent-teacher meetings that would involve the whole school. They would also plan excursions and field trips for their class groups, and for any projects that two or more classes would do together. They would also be involved in activities of preparing the school and class environment, putting up and changing posters and displays, organising children's work, etc. Such planning time is also essential for the school to review its relationship with the community, and identify points of focused action in the year such as enrolment, retention, school attendance and school achievement.

- Current in-service training-related time allocation (compulsory 20 days per year) could be partly diverted towards making time available for such reviewing, reflecting and planning.

Topic plan for the week: Machines (middle school, inclusive Classes V-VI)

Class I: Game. When I say the word, write down all the things that come to your mind. Then (pairs or groups) discuss the list. Categorise these machines based upon some similarities.

Think of some other way of categorising these and reclassifying them. Children to volunteer to make charts of machines of different types, to collect pictures and/or make drawings and paste them.

Class II: Write down as many questions about machines as you would like to find answers to. Check those to which you already know the answers as well as those that you don't.

Teacher visits each child, and suggests to him/her how he/she can find answers by referring to particular books or other sources, including talking to people.

Children think about questions for homework: "Which is the 'best' machine you know? Give reasons why you think it is so good." This question is to be discussed at home with parents, siblings and friends.

Class III: Children discuss their homework question. They continue to seek answers to the questions from students in Class III, and show their work to the teacher. Teacher also asks if anyone knows a poem about a machine, and if not, he/she teaches them

(she must come prepared).

Class IV: Now read the chapter on machines in the textbook. See what more we can learn about machines from it. Answer the questions that follow.

Class V: Children make a 'tipper truck' toy, following the instructions in a reference book. Materials have already been collected and are available in the classroom. Or the teacher can provide a list at the end of Class IV and ask the children to come prepared.

Class VI: Time to catch up and complete the work. Topic ends with the teacher asking children to put down any additional questions that they want to explore for themselves after the class.

Extending this topic for children in inclusive Classes VII – VIII

Science: Can anyone explain what a machine is? Do not give examples, but an explanation. Let's now refer to a dictionary, and write the meaning on the blackboard. Next let's check a science textbook or science dictionary. Compare the two meanings. Is there a difference? Which definition is easier to understand, or which do you think is more precise? Can we now also differentiate between a tool, an instrument and a machine?

Social Studies: Who would like to find out when the first printing press, telephone, bulb, automobile, radio/television, wheel-chair, hearing aid, cooking gas and stove, sewing machine, refrigerator, and computer were made, by whom, and in which country. Let's try to imagine, and later find out, how people lived before the invention of a particular machine or tool or instrument. What would it mean not to have that machine in everyday life? What could be used instead?

Discussion topic: Are there mre machines invented for work used by (i) the privileged sections or the underprivileged, (ii) women, or (iii) men. Explain why. Who uses machines more—men or women?

English: Essay topics: A machine that changed my life (hearing aid, wheel-chair or any other). Or the machine I would like to buy and why.

Projects: Machines that changed our lives—positive, negative. Machines that we have/don't have, and how they affect our lives in terms of time, ease/convenience, cost? OR Can you visualise how a machine (pick any) might be improved in the future? You can draw or describe, or design a machine for the future.
OR What considerations go into designing a car, motorcycle, bullock cart, or wheelchair? How can its efficiency and aesthetic appeal be enhanced?

- Monthly meetings organised for teachers at the cluster level could be based on groups of teachers teaching similar subjects and grade levels, so that they can share ideas and plan teaching for the forthcoming month together.