

# LEARNING WITHOUT BURDEN

*Report of the National Advisory Committee  
Appointed by the  
Ministry of Human Resource Development*



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भारतम् जयते

Government of India  
Ministry of Human Resource Development  
Department of Education  
New Delhi

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## NATIONAL ADVISORY COMMITTEE

To Advise on Improving the Quality of Learning While  
Reducing the Burden on School Students

(SET UP BY THE MINISTRY OF HUMAN RESOURCE DEVELOPMENT  
GOVERNMENT OF INDIA)

PROF. YASH PAL

Chairman

15 July 1993

To

Shri Arjun Singh  
Minister for Human Resource Development  
Shastri Bhawan  
New Delhi 110 001

Dear Arjun Singhji,

I have great pleasure in forwarding the report of the National Advisory Committee, you had set up quite a few months ago.

We have applied our mind to the fundamental question posed in our terms of reference: To advise on improving the quality of learning while reducing the burden on school children. We have had wide-ranging consultations, all over the country. We have talked to teachers, curriculum designers, textbook writers, various School Boards, scientists and academics, book publishers, headmasters and principals — and several others. We have analysed the textbooks in different parts of the country. We have looked at the letters received from a number of people in response to our newspaper and TV requests. And after much discussion, and a fair amount of drafting, we have produced an analysis of the problem and some recommendations.

On a personal note I would like to add that this has been a difficult report to write. Not because we had a great deal of trouble understanding the problem, or that we had lot of differences amongst ourselves, or even developing a conviction that something has to be done. The difficulty for me personally has come from my inability to persuade myself that the 'state' of our school education is an independent variable — that it could be altered without altering lot of things in our social set-up! Indeed, it is not only the set-up in the country, but also the defective interpretation of

the external scenario, that finally impacts our young students, robbing them of a wholesome growth and depriving the country of what they could contribute. Nevertheless we have made a number of recommendations which should help.

In regard to the burden on children, the gravitational load of the school bag has been discussed widely in media, even in Parliament. After this study I and most of my colleagues on the committee are convinced that the more pernicious burden is that of non-comprehension. In fact the mechanical load on many of our students in Government and Municipal schools may not be too heavy, but the load of non-comprehension is equally cruel. In fact, the suggestion has been made to us that a significant fraction of children who drop out may be those who refuse to compromise with non-comprehension — they are potentially superior to those who just memorise and do well in examination, without comprehending very much! I personally do believe that "very little, fully comprehended, is far better than a great deal, poorly comprehended".

I suggest that the analysis of this report and its general recommendations should be exposed and discussed as widely as possible. Without claiming revolutionary, new insights, or things which may not have been said before, I do believe a concerned discourse on some of the fundamental points made in this report would be good for our future. The report should certainly be published, not only in English and Hindi, but also in all the regional languages. It should be widely circulated, so that a large number of teachers, parents and students can begin to discuss these matters.

Finally, I would like to thank you for bearing with us while we struggled to draft what to us appears to be a reasonable set of recommendations.

With regards,

Yours sincerely,

YASH PAI

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## *Introduction*

Concern regarding academic burden on students and unsatisfactory quality of learning has been voiced time and again in our country during the past two decades. The question has been discussed extensively by several committees and groups. The Ishwarbhai Patel Review Committee (1977), National Council of Educational Research and Training (NCERT) Working Group (1984) and National Policy on Education (NPE) Review Committees (1990) made several recommendations to reduce the academic burden on students. The curriculum development agencies are generally in agreement with the recommendations of the committee and assure the public that these would be kept in view at the time of the forthcoming revision of curricula. But the problem, instead of being mitigated, becomes more acute when a new curriculum is introduced. This has happened in the case of new curriculum introduced in the wake of implementation of NPE (1986). With a view to have a fresh look on the problems of education, particularly with regard to the problem of academic burden on students, the Ministry of Human Resource Development, Government of India, set up a National Advisory Committee in March 1992 with the following terms of reference :

To advise on the ways and means to reduce the load on school students at all levels particularly the young students, while improving quality of learning including capability for life-long self-learning and skill formulation.

Before starting its work, the Committee decided the parameters of its work and also the methodology for completing the task entrusted to it. With a view to keeping a national perspective in view, the Committee decided not to confine its work to the Central Board of Secondary Education (CBSE) or NCERT syllabi and textbooks but to take into account the textbooks used in different states and union territories also. Secondly, the Committee decided to base its recommendations on the data obtained through perception surveys, wide-ranging consultations with teachers and analysis of textbooks and other instructional materials. Thirdly, the Committee decided to look at the work of agencies/organisations doing innovative programmes.

The process of consultation was initiated with a meeting with a few faculty members of NCERT followed by meetings with teachers and principals working in different states at four places in the country, viz. Delhi, Thiruvananthapuram, Pune and Calcutta. The consultation meetings were also held with voluntary organisations engaged in innovative programmes, syllabus and textbook writers, private publishers, and Chairpersons of Boards of Secondary Education. Some members of the Committee organised meetings with parents, teachers and students at Bombay, Nasik, Baroda and Calcutta. Surveys to ascertain the opinions of teachers and parents were conducted with the help of questionnaires at Bombay and Delhi.

To involve the whole country in this exercise of looking at the problems of school education from the perspective of mechanical load of studies on children, views and suggestions were invited from the students, teachers, parents and general public through advertisements in the newspapers and special announcements by All India Radio and Doordarshan. The Committee received more than 600 memoranda, letters and write-ups from students, teachers, parents and professionals interested in children's education.

The wide-ranging consultations with knowledgeable people, analysis of the existing instructional materials and reactions of the teachers and students have enabled the Committee to understand the functioning of the present educational system which forms the basis of its recommendations.

In its work, the Committee received cooperation from a large number of teachers, principals, syllabus and textbook writers, organisations, associations and departments. We gratefully acknowledge their contribution in our work. Particularly, we are grateful to the State Council of Educational Research and Training (SCERT), Delhi, where the Committee's office was located, for providing all types of administrative support which tremendously facilitated our work. We are also thankful to NCERT and its Department of Social Sciences and Humanities for providing finances and other facilities for holding meetings of the Committee. The education departments of the states of Kerala, Maharashtra and West Bengal, and the NCERT Field Advisors in these states deserve appreciation for hosting the regional consultation meetings held at Thiruvananthapuram, Pune and Calcutta. Special thanks are due to voluntary organisations, Alla Rippu, Digantar and Eklavya for sharing their experiences with the members of the Committee. We express our sense of gratitude to the authorities of Doordarshan and Akashvani for making special announcement requesting the audience to send their views and suggestions to the Committee. Above all, we are extremely grateful to hundreds of parents,

students and teachers who responded to our invitation and sent their views in writing, in many a times after holding meetings/workshops at their places.

Smt. Meenu Taneja, stenographer, SCERT, Delhi deserves a pat for providing all sorts of secretarial assistance and for typing minutes, discussion papers and finally the report.

## *The Problem of Curriculum Load*

### **1. Preamble**

Our Committee was concerned with one major flaw of our system of education. This flaw can be identified briefly by saying that "a lot is taught, but little is learnt or understood". The problem manifests itself in a variety of ways. The most common and striking manifestation is the size of the school bag that children can be seen carrying from home to school and back to home everyday. A survey conducted in Delhi revealed that the weight of school bag, on an average, in primary classes in public schools is more than 4 kg while it is around 1 kg in MCD schools. Nevertheless the load we want to discuss is not only the physical load but the load of learning which is there for all children irrespective of the category or type of schools where they study. Eminent writer R. K. Narayan had drawn the country's attention to this daily sight by making a moving speech in the Rajya Sabha a few years ago. The situation has become worse over these years, with even pre-school children carrying a bag of books and notebooks. And the sight is not confined to metropolitan cities alone; it can be seen in small towns and the bigger villages too.

The weight of the school bag represents one dimension of the problem; another dimension can be seen in the child's daily routine. Right from early childhood, many children specially those belonging to middle classes, are made to slog through home work, tuitions and coaching classes of different kinds. Leisure has become a highly scarce commodity in the child's, especially the urban child's life. The child's innate nature and capacities have no opportunity to find expression in a daily routine which permits no time to play, to enjoy simple pleasures, and to explore the world.

### **2. Joyless Learning**

It is hard to reconcile the rigorous 'academic' regime that is imposed on children from an early age with the widespread complaint made about the declining norms and performance of the formal system of

education. Teachers routinely complain that they do not have enough time to explain anything in detail, or to organise activities in the classroom. 'Covering' the syllabus seems to have become an end in itself, unrelated to the philosophical and social aims of education. The manner in which the syllabus is 'covered' in the average classroom is by means of reading the prescribed textbook aloud, with occasional noting of salient points on the blackboard. Opportunities for children to carry out experiments, excursions, or any kind of observations are scarce even in the best of schools. In the average school, especially the school located in a rural area, even routine teaching of the kind described above does not take place in many cases. In several states, school teachers encourage children to attend after-school tuition given for a fee while regular classroom teaching has become a tenuous ritual.

One message of this situation is that both the teacher and the child have lost the sense of joy in being involved in an educational process. Teaching and learning have both become a chore for a great number of teachers and children. Barring those studying in reputed or exceptional institutions, the majority of our school-going children are made to view learning at school as a boring, even unpleasant and bitter experience. They are daily socialised to look upon education as mainly a process of preparing for examinations. No other motivation seems to have any legitimacy.

The contribution that teachers make towards this kind of socialisation is especially worrisome. Trained teachers are expected to be aware of the wider aims of education; indeed, aims like 'development of the child's total personality' are the shibboleths of teacher training institutions everywhere in the country. It appears that teachers feel they can do little to pursue such lofty aims in any realistic sense under the harsh circumstances created by factors like excessively large classes, a heavy syllabus, difficult textbooks, and so on. Moreover, majority of them neither know nor have the necessary skills to realise the goals of education. The recommended pupil-teacher ratio of forty to one is now more an exception than a norm, and in many parts of the country it is customary to have sixty to eighty students in one class. The Committee learnt that in many states senior secondary classes often have one hundred or more students, many of them spilling into the corridor. In the national capital, many 'model' secondary schools, Central Schools, and several elite 'public' schools have classes, including primary classes, with more than sixty students.

This kind of class-size understandably generates a feeling of helplessness among teachers, but why must teachers feel helpless in the face of curriculum-related problems such as heavy syllabi, poorly produced textbooks, etc.? Why don't they act in more vocal ways and

involve themselves in curriculum reform? Apart from the fact that there are very few forums encouraging curriculum inquiry and reform in any systematic manner, it seems to be an entrenched attitude among teachers to regard all decisions about curriculum and textbooks as the responsibility of 'authorities'. The fact is that while the teachers' involvement in the preparation of syllabi and textbooks is verbalised as a matter of principle, in practice it takes the shape of token involvement of a handful of teachers. Most teachers have reason, therefore, to think that they have little to say about the changes made from time to time in syllabi and textbooks. Even in such extreme cases where a textbook has a factual mistake, no complaints are made by teachers asking for correction of error. There is no established procedure or official forum to mobilise teacher vigilance and participation in curriculum improvement. On the contrary, there are cases where an individual teacher who complained about an error in a state-published textbook, was taken to task. Even if such cases can be described as rare or exceptionally unfortunate, they explain why the majority of teachers intuitively feel that it is not their business to critically examine the syllabus and texts they teach.

### 3. Examination System

Much has been written by various official committees on the ills of our examination system. The major, well-understood defect of the examination system is that it focuses on children's ability to reproduce information to the exclusion of the ability to apply concepts and information on unfamiliar, new problems, or simply to think. The public examinations taken after Classes X and XII have assumed the importance of major events which have a set character or culture of their own. The awe they generate, the responses they trigger, and the kind of preparation they demand have all got so entrenched into the social lore that minor improvements in the style of question papers do not make difference to the dominant influence that the examination system has on the processes of learning and teaching. The influence is so strong that schools start holding a formal written examination several years prior to Class X indeed, in the primary classes in many parts of the country. And children receive the message almost as soon as they start attending school that the only thing which matters here is one's performance in the examination.

Both the teacher and the parents constantly reinforce the fear of examination and the need to prepare for it in the only manner that seems practical, namely, by memorising a whole lot of information from the textbooks and guidebooks. Educated parents, who have

themselves gone through examinations, and the uneducated parents, whose knowledge of the examination system is based on social lore, share the belief that what really matters in education is the score one gets in the final examination. This belief is undoubtedly rooted in social or market reality. Percentage of marks obtained in the high school, higher secondary, or BA/B.Sc examinations is what ultimately matters in determining a student's chance of being called for an interview for admission to a university or for employment. Since the examination score is what a candidate carries with him or her as the key authoritative record of school or college performance, higher level institutions or employing agencies understandably rely on it. It is a process in which no beginning or end can be meaningfully established. Changing the system of examination in a structural or even in a merely procedural sense does not require that a source outcome or cause-effect relationship be established; yet, the examination system goes on, apparently with the help of energies or rationales located in the system of education itself.

#### 4. Textbook as the 'Truth'

The pervasive effects of the examination system can be seen in the style and content of textbooks, and not just guidebooks which are specifically manufactured to help children pass an examination. If 'facts' or 'information' constitute the main burden of an examination, the same is true of textbooks. Barring exceptions, our textbooks appear to have been written primarily to convey information or 'facts', rather than to make children think and explore. Over the years some attempts have been made to incorporate a certain amount of reflective writing in textbooks. Such writing is so exceptional that its examples can be spotted and named without difficulty. 'How leaves are designed' in a Class VIII textbook is one such piece of writing\*. It stands out from among the thousands of pages of textbooks in different subjects that our teachers and children have to go through painstakingly so that they can retain the information recorded in those pages in a highly compressed, usually abstruse manner. The more common style used in the textbooks is exemplified by passages of the following kind:"

The term pH is defined as the negative logarithm to the base 10 of the hydrogen ion concentration expressed in gram ions per litre or moles per litre. (Class X)

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\* Class VIII science textbook prepared by NCERT

\*\* We have decided to cite such examples without giving a reference in order to avoid the impression that we are criticising certain specific titles, authors, publishers or organisations. Our aim is to highlight certain common tendencies in the style of textbook writing.

Fatty acids are slowly hydrolysed during digestion in the small intestine to form glycerol and fatty acids through the enzyme action of lipase which is secreted by the pancreas. (Class X)

We find that while dividing a decimal by a multiple of 10,000 or 1,000, we first move the decimal point to the left as many places as there are zeros in the number and then divide the resulting decimal by the second factor of the divisor. (Class V)

The problem of readability in textbooks becomes grim in the context of a system which often leaves the child with no resource other than the prescribed textbook. The extent to which the child can rely on a teacher to elucidate tersely written text material is dependent on the quality of teachers, their training, and their accountability. From what impression the Committee could form about these aspects of the system, it seems valid to say that the child is very often helpless in the face of a style of teaching that is far from being interactive, let alone the absence or irregular presence of teachers. (And we are not saying that the teachers alone are responsible for the kind of teaching that takes place daily in lakhs of classrooms that have hardly any equipment and often not even a proper means of ventilation or lighting.) Under the circumstances that are widely prevalent in our country, a child is more likely than not to mug up the definition of 'pH' quoted above without grasping it. And mugging does get the child through the examination!

Textbooks and guidebooks form a tight nexus. In some parts of the country children are compelled to buy the guidebook (or 'key') along with the textbook. The economic and business aspects of this pairing apart, the academic function of the textbook has become quite dubious indeed. It is *not* perceived as one of the resources for learning about a subject, but as the *only* authoritative resource. This kind of sanctity distorts what useful purpose the textbook could serve. Teachers see it as a body of 'truths' which children must learn by heart. This perception and urge to 'cover' the chapters of the prescribed textbook, turn all knowledge into a load to be borne by the child's memory.

The distance between the child's everyday life and the content of the textbook further accentuates the transformation of knowledge into a load. We are not talking here about advanced science or mathematics, but about elementary science, social studies, language and arithmetic. Textbooks treat these subjects in a manner that leads to alienation of knowledge from the child's world. This tragic phenomenon takes different forms in different subjects. In the natural sciences, it takes the form of esotericisation of the subject. In the social sciences it becomes manifest in the coating of every inquiry in didacticism, suggestive of one preferred answer to every question. A common source of alienation of subject-matter from the children's perspective and life is the

presentation of the life-style and world view of the urban well-off class. This life-style is characterised by access to concrete housing, modern kitchens, electrical gadgets, and so on. Of course there is nothing 'wrong' with this life-style; but the symbolisation of this life-style in every illustration and description that concerns a child's home life alienates millions of children who live in houses with traditional kitchens, or with no separate kitchens. Objects of daily use in common Indian homes, such as a broom or clay pitcher, are seldom seen in textbooks. One wonders whether the common Indian broom, which could be a versatile resource for learning about the social and physical environment, is perceived by our textbook writers and illustrators with a sense of stigma or as a symbol of backwardness. Or could it be that it is simply too common to be seen as being of any use in an educational material? Neither of the two guesses is totally irrelevant in view of the complete absence of common objects of ordinary Indian life in the world depicted in textbooks.

The most common message that children get from the textbooks is that the life ordinary people live is 'wrong' or irrational. And this kind of didactic rejection does not apply to non-middle class life alone. All simple joys of childhood are also criticised. No better example of this can be given than the message conveyed in a Class V exercise which asks children to decide whether the statement 'Road is also a playground', is correct or wrong. The right response is that this statement is 'wrong', the message of the lesson being that playing on the street can be dangerous. This message is of course true in a normative sense, but it ignores the reality of the overwhelming majority of urban children who have no other space except the street to play. The moot point is not the scarcity of space, but rather the need to accept the universally valid fact that children enjoy playing on the street. This joy must be respected in a text written from a child-centred point of view. To argue that a respectful acknowledgement of this joy will amount to sanctioning carelessness, or to say that children must be warned about the risks of playing on the street is to trivialise the issue. Every child who plays on the street fully knows the dangers involved in it. Science textbooks need not waste valuable pages on such trivial preaching which is precisely what they do throughout the elementary classes in place of using these golden years of childhood to arouse curiosity about things and ideas.

## 5. Language Textbooks

We hardly need to assert that our textbooks are not written from the child's viewpoint. Neither the mode of communication, nor the selection

of objects depicted, nor the language conveys the centrality of the child in the world constructed by the text. This last dimension of language deserves some elaboration. The vocabulary and syntax used in the textbooks in the Hindi region were critically referred to by a number of individuals and groups whom the Committee met during the course of its deliberations. Not just the textbooks used for the teaching of the natural and the social sciences, but even the textbook used for the teaching of the mother tongue are written in such stylised diction and sentence-structure, that children cannot be expected to see the language used in them as their own. Words, expressions and nuances commonly used by children and others in their milieu are all absent from textbooks. So is humour. An artificial, sophisticated style dominates textbook lessons, reinforcing the tradition of distancing knowledge from life. The language used in textbooks, thus, deepens the sense of 'burden' attached to all school-related knowledge.

#### **6. Observation Discouraged**

A highly disturbing tendency we discovered in text writing, which exacerbates the problem we are discussing, is that of treating pictures as substitutes for experience. We found textbooks asking children to observe a picture of the object under study rather than asking children and the teacher to go out and observe the object itself in nature. For example, a Class V science text says : 'Look at the picture of a cactus plant. Observe the thick green structure...' Such an instruction pre-empts what motivation there may be in a teacher or child to bring an actual cactus plant to the class or to grow one. The most painful example of this phenomenon brought to our attention was one in which a private publisher claimed that he had made the teacher's task 'easier' by turning an official 'Teacher's Guide', which suggests that the teacher should take children outside the school and identify some common birds, into a text where the pictures of all the common birds with their names were provided for ready use. This case is especially painful as it shows how even a specific instruction given in a Teacher's Guide (Teacher's Guides are themselves rare; and in subjects in which they have been prepared in certain states, circulation has not been satisfactorily looked after) to encourage teachers to extend the lesson beyond the four walls of the classroom is co-opted within the dominant, traditional approach of teaching everything verbally from a textbook. Over the recent years, some textbooks have adopted the vocabulary of observation and exploration or discovery as a necessary part of science teaching, but even here, virtually all commands for observation conclude with statements about what will be seen if an observation is actually

made, thereby making it unnecessary for the teacher and children to find an object and actually observe it.

## 7. Structure of Syllabus

The absence of the child's viewpoint is also reflected in the organisation of syllabi in different subjects. We received a large number of complaints from parents as well as teachers that the content of syllabi lacks an overall organisation or coherence. Gaps in the syllabi between the lower and the higher secondary stages are as common as repetitions of the same content. These weaknesses of organisation apparently lead to memorisation and poor comprehension, both exacerbating the sense of curriculum load. Gaps between the secondary and the senior secondary stages seem to be glaring in the science syllabi. When students come to Class XI, they often find themselves without a clue even if they have done well in Class X. The level of abstraction attempted in the senior secondary stage science syllabi and textbooks, especially the physics textbooks, represents a jump in many topics. Apparently, those preparing the senior secondary syllabi and texts lacked adequate familiarity with the syllabi and texts used in the earlier classes. In fact, they had no occasion to interact with the persons involved in the preparation of syllabi and textbooks for secondary classes (IX and X).

Repetitions of concepts and information also leads to boredom and a sense of load. The need to repeat is rooted in the flawed structure of syllabi. In the primary classes, ideas and information are presented in a synoptic manner, making the text look deceptively simple. In the later classes, the same ideas are repeated, with some elaboration which does not prevent the child from viewing the ideas as trivialised by repetition. In the study of nutrition and health, for example, virtually the same ideas and information are given in the syllabi and texts of Classes III, IV, V, VII and X. Even the questions given at the end of the lessons in the texts are almost of the same kind. Apparently, the structure of syllabi is not carefully thought out. Indeed, our Committee was told by senior experts, who have been involved in syllabus and textbook preparation, that experts working on the syllabus of different levels (secondary and senior secondary) had no contact with each other. Reference to such procedural lapses, however, is not necessary to explain the tendency towards repetition that is embedded in the structure of the syllabus and has been reinforced by tradition.

History is the most clear case in point. Although it forms one part of the subject called social sciences, it offers a prime example of curriculum load. Despite many changes that have come about in the style of history texts, the history syllabus continues to be a frustrating

and meaningless experience for children. The aim of teaching history is defeated because children are not enabled to relate to their own heritage. Traditionally, it requires children to form an overall picture of the 'whole' of India's known history, from ancient to modern times, during the three years from Classes VI to VIII. Since the texts for these classes are required to cover such a vast span, the density of these texts becomes extremely high which means that historical time is greatly compressed, i.e. a few sentences are deemed to 'cover' several decades. The synoptic style forces the child into 'accepting' whatever is narrated. There aren't enough details that a child could use to work out some kind of argument or interpretation, but the sheer volume of text (which is supposed to 'cover' 'all' of India's history in three years) forces the child (and the teacher) to 'take in' as much text as possible without 'wasting' time in studying or constructing an argument.

This common problem of the history syllabus apart, we found that the content of the history syllabus in certain states was conceived as a densely packed box of informations. The syllabus of history in West Bengal illustrates this tendency in tragically exaggerated proportions. For example in Class VIII, children are required to learn 17 topics in all which are :

1. Modern age; 2. Renaissance in Europe; 3. Europeans widen the world; 4. Reformation in Europe; 5. The English Revolution in the 17th century; 6. India; 7. Foundation and growth of the British power in India till 1857 in short narrative form; 8. World in the 18th century; 9. Europe since 1815; 10. (a) Developments in China till 1911; (b) Rise of Japan as a great power till 1914; 11. India under the crown 1858-1914; 12. The First World War; 13. The Bolshevik Revolution; 14. Europe 1919-1939; 15. The Second World War; 16. India 1919-1947; 17. (a) Revolution in China 1911-1949; (b) Revolution in South East Asia after 1945; (c) Spread of nationalism and unrest in subject countries during the Second World War.

The entire syllabus is to be covered in 135 pages of a text, according to the instruction given in the syllabus itself. Apparently, the syllabus makers believe that compression of information in terms of page-space does not affect the readability, let alone comprehensibility, of a text.

### 8. Teaching Everything

The problem of densely packed syllabi like this one cuts across disciplines. In geography, it takes the form of all the continents being 'covered' under regional geography between Classes VI and VIII. In mathematics and the natural sciences, the packing of details makes any kind of learning with understanding, leave alone enjoyment,

virtually impossible. Numerous examples could be given from these disciplines to illustrate the problem. In *one* page of a Class VII science textbook we find all these items 'covered': definition of time period, how to find the number of oscillations per second, definition of frequency, 'Hertz' unit of frequency, the idea that vibrations have amplitude and frequency, definitions of these, the concept of sound as vibration, loudness and pitch, and finally frequency/pitch and its relation to speed of rotation and tension. We are not citing this example as a specific case to be looked into, but as evidence of a deeply rooted tendency, rather an ideology, which impels syllabus and textbook planners to include 'everything' without any regard for children's ability at different ages to learn and the time available in an average school for teaching a subject. Class XI and XII textbooks of science, prepared recently with a view apparently to implement the National Education Policy, have been widely criticised on these scores. Children studying science subjects have been asked by their teachers to look for private tutors, the rationale being that there may not be enough time in the class to cover the syllabus, and some of the syllabus being beyond the capacities of the teacher. The terse content of these texts was apparently edited and reviewed in some haste, we were informed, due to constraints of time while sending the manuscripts for publication. Perhaps it can be argued that these textbooks are liked by the highly motivated and the brightest among the students and teachers. If this indeed is the case, it gives all the more reason to worry about the fate of the overwhelming majority of children studying in ordinary schools.

In mathematics, the situation seems to be grim right from the start of the child's school career. Far too many abstractions are introduced all at once with scant attention paid to well-known facts about development of mathematical thinking in children. To begin with, children are expected to handle arithmetical operations on a very large numbers early. In Class I, they are supposed to go up to 100 (compared to this a British child in this class spends the whole year working with numbers up to 20), in Class II up to 1000, in Class III, up to 10,000, in Class IV up to a million, and in Class V up to a crore. Even though the conservation of volume and weight are known to emerge in the child's mind after the conservation of length is fully established, all three are introduced simultaneously (usually in one unit of study) at the young age of seven or eight years, with the expectation that children will compute with standard units. Concrete operational thought, which is characteristic of elementary school children, demands manipulation of objects and activities using a variety of materials (to enable 'elaboration' of a concept, i.e. its dislocation from any one material or object). Such activities become impossible to organise under a

curriculum which 'progresses' so swiftly from concept to concept. Also, children of this stage find proportional reasoning difficult yet percentage and ratio are introduced in Classes IV and V. In the middle and higher classes, the tendency to follow the logic of the discipline of mathematics rather than psychology of learning as the basis of the curriculum becomes even more dominant. Mathematics, thus, acquires the image of an esoteric discipline which has little application in the real life of the child.

### **9. Starting Early**

The general problems of curriculum conceptualisation that we have discussed in this part of our report can all be seen reflected in the emerging pre-school sector of the education system. Despite official stipulations that no textbooks be used at this stage, pre-school teachers and parents in the urban centre are feeling 'compelled' to burden the young child with textbooks and the formal learning they represent. The sense of compulsion comes from a widespread feeling that unless academic training of a child starts early, he or she cannot cope with the fast-paced pedagogy and the competitive ethos of the later school years. The pernicious grip of this false argument manifests itself in absurd, and of course deeply harmful, practices in pre-schools and primary schools, such as early emphasis on shapely drawing, writing, and memorising information. Intrinsic motivation and the child's natural abilities are being smothered at a scale so vast that it cannot be correctly estimated. Our national commitment to the development of human resource is daily challenged in our nurseries and primary schools.

### **10. Not Just an Urban Problem**

The problem we have tried to identify in this part of the report is not confined to urban areas as some people think. It is deeply relevant to children's education in rural India although there, more basic problems — such as abysmally poor condition of schools, absenteeism among teachers, etc. may cloud the problem of curriculum load. In our view, the problem of a high drop-out rate, which has rightly preoccupied our policy-makers for a long time, has one of its origins in the curriculum scenario we have portrayed. A curriculum policy that takes away the elements of joy and inquiry from learning obviously contributes to the rate at which children leave school in the early years, undoubtedly under the force of economic and social circumstances. As we have indicated earlier, symbolic tilt towards an urban, middle class way of life in textbooks can also be expected to make the rural child's association with his or her experience at school thin and brittle. Quality

of teachers and the equipment available to them also make an impact on the tenuous and fragile link that the first-generation learner in many parts of rural India tries to establish with the system of education.

## *Roots of the Problem*

### **1. Knowledge vs Information**

In our discussions with people directly involved in syllabi and textbook preparation all over the country, we found one argument repeated over and over again as the main justification for the phenomenon we have described in Chapter II. The argument was that India has to catch up with the developed countries where an explosion of knowledge has occurred; therefore, our children must learn a lot more than they used to, which means that new topics, new concepts and information have to be added to the syllabi and textbooks. This argument seems to be so widespread and so tenacious that those who believe in it use it as an undebatable 'given'. When it is pointed out to them that children of the so-called developed countries learn certain concepts a lot later than our children do (for example, in chemistry, the concept of valency is now taught in our schools in Class VII whereas European children do not hear about it till they are in Class IX), supporters of the 'explosion of knowledge' argument simply say that the European societies are already way ahead of us, so they can afford to instruct their children at a relaxed pace. In geography, when it is pointed out that European and North American children do not have to study every continent (only selected countries are intensively studied instead), the answer given is that in Western societies children have access to many resources of learning outside the school whereas the majority of our children are dependent on the school for getting to know about the world. The idea entrenched in the 'explosion of knowledge' theory finds similar justifications for the present state of syllabi and texts in other school subjects.

The notion that there has been an explosion of knowledge apparently treats knowledge and information as synonymous. It is true that the twentieth century has been a period of massive expansion in human capacity to find new facts and to store them, but the concepts and theories that assist in the generation and organisation of information can hardly be said to have multiplied at an 'explosive' rate. (It is another

matter that in an ex-colonial society it often looks as if all new 'knowledge' is being produced by 'others' and our job is simply to 'learn' and consume this knowledge.) Also, the important thing in children's education ought to be concept-formation and growth of capacity for theory-building, rather than possession of vast amounts of information. The 'explosion of knowledge' idea prevents us from appreciating that learning in childhood is not the same thing as storing information about different subjects. If we say that a child has knowledge of phenomenon 'x', we can anticipate three possible ways in which this statement will be interpreted:

- i) the child has been given information about phenomenon 'x';
- ii) the child can reproduce information about phenomenon 'x';
- iii) the child has understood phenomenon 'x' and he or she can apply this understanding on other phenomena.

It is mostly the first two meanings that hold in the context of formal education in our country, the first being used as a basis for the second. 'Understanding' is often confused with 'acquisition of facts'.

Such a confusion leads to the neglect of 'understanding' as an aim of education. It would be correct to say that this neglect of understanding has gone so far and deep in our education system that a child can pass almost any examination without any understanding of the phenomena he or she has been told about in books or in the classroom. To a great extent, this paradoxical situation can be attributed to the excessive emphasis placed in our syllabi and textbooks on information or 'names' of things. Children have no choice but to memorise all the 'names' in order to 'prove' at an examination that they have 'understood' a phenomenon. Despite all kinds of claims that examinations have been reformed, they continue to focus on testing the possession of 'correct' information (i.e. the names of things, definitions, examples, etc.). Recall-type questions outnumber the questions that test the child's capacity to speculate, evaluate or judge, and to apply an idea in an unfamiliar context. Board examinations, taken at the end of Class X and Class XII, have remained rigid, bureaucratic and essentially uneducative (as the child never sees why he or she was marked in a certain way), and mainly a source of awe because of the amount of information they demand in a manner ready for instant recall. Such a system obviously influences the tests and annual examinations taken by schools in earlier classes as well as the daily pedagogy practised in classrooms. The fact that entrance tests of prestigious institutions like the Indian Institutes of Technology have less focus on recall (although they put a premium on speed) is ignored, and even these tests are cited for justifying the excessively large syllabi in certain subjects in the senior secondary classes.

## 2. Isolation of Experts from Classroom Realities

The new topics and information put into the syllabus and textbooks at the time of each successive revision are usually added at the behest of experts of different subjects. These experts are university-level teachers, sometimes including individuals of high stature in the research world. Their involvement in the writing or revision of textbooks is indeed appreciable but they have little exposure to children in classroom situations. Their exposure to school teachers is also confined to interaction with the few teachers who are selected as members of syllabus and textbook committees. Several factors, such as the difference of social and official status, make it difficult for school teachers serving on these committees to freely put across their feelings and experiences regarding the teachability of a syllabus or the style of a textbook.

Teachability can be defined as the quotient of content that an average teacher can put across at a comfortable pace in a thirty-five minute school period. If our textbooks were to be judged in the light of this criterion, most of them, especially in the sciences, mathematics, and the social sciences, would appear as unteachable. The amount of information and concept-load they present are far in excess of the amount that can be put across in any meaningful way in thirty-five minute periods allotted for a school subject in one academic session. It appears that no rigorous count, using the thirty-five minute period as a unit, of the total teaching time available for a subject in any year is used as a basis for determining syllabus and text content. Indeed, the syllabi and textbooks are evidence to say that the experts involved in preparing them have little knowledge of school and classroom realities. This limitation of the experts extends to their possible ignorance of children and of the processes that children use for learning new ideas. Textbooks simply do not reflect the versatile search of the ordinary child for clues to make sense of natural or social phenomena. Typically, school texts proceed in a linear fashion, adding bits of information in, and concepts as they go along. The linear patterns they follow often spill across school years, i.e. something left off in Class VII is picked up again in Class IX, and so on. Very seldom is an effort made to construct knowledge-patterns in non-linear ways.

We feel that if experts involved in the preparation of syllabi and textbooks had the opportunity to work with children and their teachers, they would have a chance to develop some insight into children's learning strategies. This would have helped them to develop the ability to emulate such strategies in script-writing for textbooks. Interaction with children might enable experts to develop a certain amount of sensitivity towards the living and versatile approaches used by children.

Also, in the course of such interaction, the experts might also perceive the need to equip themselves with knowledge of children's psychology, particularly the psychology of learning, before venturing out on the task of textbook preparation. This, of course, implies that the job of syllabus and textbook preparation be perceived as a serious professional activity, not as a part-time obligation.

### 3. Centralised Character

In the specific context of the curriculum planning and textbook production, we feel, the system invites a number of problems upon itself on account of being unnecessarily centralised. It seems there is a widespread misconception which justifies centralisation in these matters. This misconception treats the content of syllabus and textbooks as synonymous with learning and testing norms. On the basis of this confusion, it is argued that syllabi and textbooks should be the same all over a state, even all over the country, in order to ensure uniformity of standards. This kind of argument completely overlooks the lopsided manner in which standards are set under the present system by an examination system which focusses on information rather than on skills and capacity to apply skills. Indeed, there is a 'catch 22' situation: the examination system ignores skills, concentrating on memorised information, definitions and descriptions; therefore, syllabus and textbooks, which cannot do justice to diversified milieux, varying needs and facilities, become necessary to ensure that all children 'know' the same 'facts'.

This circular argument has created a situation in which curriculum and textbook preparation is confined to the state capitals and New Delhi. At regional and local levels, teachers do not perceive curriculum development and preparation of educational materials as part of their job. And indeed, the way these tasks have been defined and traditionally carried out in our country, they are not the teacher's job. The teacher sees his or her role as one of elucidating whatever content of knowledge is prescribed in the syllabus. At the primary and lower secondary stages, teachers come to know the syllabus through the textbook which acts as the *de facto* syllabus. 'Covering' the syllabus means 'covering' or finishing the textbook. This kind of perception results in the confinement of classroom life to a narrow orbit. Classroom knowledge assumes total independence from the child's own experience and knowledge of the world. *As a consequence of this de-coupling, children begin to compartmentalise knowledge into two categories: that which has currency in the school and classroom, and the other which has uses and relevance outside the school.* Necessarily, the knowledge in the first category ceases to have any 'life' and becomes increasingly ritualistic and burdensome.

Teachers also carry the same kind of categorisation in their mind; very few of them are able to help the child make bridges between what is learnt at school and what is required to face real-life situations. One teacher who tried to make such a bridge in a lesson about letter-writing was asked by a Class VI child: "Madam, shall we write it the way we write at home or in the school way?"

While several factors, including those related to the training of teachers, can be held responsible for this aspect of the situation, we feel that the centralised structures of syllabus and textbook preparation set the tone. Howsoever 'good' a textbook produced at central level may be on professional standards, it cannot reflect the subtler nuances of life in a village of Kashmir or Assam. Adaptation to local conditions is indeed officially carried out to match the content of textbooks with local conditions, but it does not change the basic character of a textbook. Adaptation of syllabi to local conditions is even less effectively possible.

#### 4. Convention of 'Teaching the Text'

Lack of adequate opportunities for teachers to participate in the processes of syllabus and textbook preparation is a major factor indirectly responsible for the problem of unrealistic syllabi or curriculum load. Teachers perform a more direct role in the context of this problem by perceiving the content of the textbook as a rigid boundary or definer of their work in the classroom. Boredom is the inevitable outcome when a tersely written textbook is taught in a rigid, mechanical manner. Poor grasp among teachers of their role as translators of the curriculum into classroom activity is a widely prevalent characteristic of our system. We are citing this as a relevant aspect of the phenomenon of curriculum load *without* suggesting that there is a vicious cycle here, i.e. teaching cannot improve unless there are better textbooks, etc. We feel that strategies to improve textbook writing and production must work parallel to strategies for improvement in teacher training and for creating an ethos in which teachers would feel motivated to take an academic interest in their work. The perception that a teacher can do little in the classroom that is different from what the textbook says is part of a historical legacy. This legacy must be transcended and the self-perception rooted in it must be changed. Teacher training institutions and the mass media, both can assist in making this change possible.

In the context of constructing a new self-image of the teacher, pre-service training is a key but elusive area of reform. Past attempts to improve teacher training programmes and institutions have met with rather limited success. By and large, teacher training continues to be isolated from mainstream academic areas related to education. Inservice

training too in most of the places, has assumed the character of a ritual devoid of academic substance or the capacity to stimulate. The current efforts to provide statutory status to the National Council for Teacher Education (NCTE) (as envisaged in the National Education Policy) may perhaps make some impact on the weak training that is generally available in the country to people who want to work with children, especially young children.

Administrative and legal concern needs to be applied to several training programmes running as commercial success stories, such as those offering a degree by correspondence. Similarly, there is need to examine existing policies with regard to nursery teacher training courses and institutions. Indeed, what is required is a review of the overall training policy which permits the traditional bifurcation of degree programmes from non-degree programmes, and their application to different stages of school education. We hope that after acquiring statutory status, the NCTE will work out a comprehensive training programme to cover all stages of schooling, ending the bifurcation we have mentioned above. Such a programme will have to be radically different from the present ones which are anchored in the culture of late nineteenth century normal schools, and are sadly lacking both in perspective and means to equip teachers with the capacity to understand children and their learning processes in a professional manner.

##### **5. Competition-based Social Ethos**

Our social ethos, particularly in the urban areas, are now fully entrenched in the competitive spirit which is fast becoming our way of life. The desire to catch up with the industrially developed countries has given it further impetus. Rising aspirations of people in all sections of the society and the growing realisation that education is an important instrument to fulfil their aspirations have resulted in a craze for admission to English-medium schools which start imparting formal education too early in the child's life.

The educated sections of the society believe that command over English is the key to upward mobility in social life. This has led to unprecedented growth in the number of private schools where English is not only taught as a subject but is also used as medium of education in all subjects right from Class I. It is a well-known fact that young children studying in English-medium schools mug up the content of science and social sciences without understanding. It is an accepted principle of pedagogy that whatever is memorised without understanding proves burdensome for children. Any language other

than the mother tongue of the child, if used as medium of instruction, is a big source of academic burden on children. Most of the parents in urban and semi-urban areas do not realise it, in fact they try to promote the use of English as medium of education. Unfortunately, instead of resisting the pressure of the competitive spirit prevalent in the society or directing it in appropriate channels, our educational system has succumbed to it. The most conspicuous manifestations of this phenomenon in education are upgradation of content of syllabus by advancing introduction of many topics and subjects in utter disregard of the process of maturation. The entrance tests for admission to professional courses like engineering and medicine have influenced the objectives, content and methodology of education in many ways. The 'quiz culture' which has taken roots in education, can be attributed to these tests.

With a view to provide incentives to 'high achievers' and 'talented' in different fields, high profile competitions are organised by different departments and institutions in the name of 'talent search', which at the most provide moments of brief glory to the winners but damage the 'ego strength' of numerous others who participate in the contests at the cost of leisurely pursuit of knowledge at their own pace and in their own ways. The experience of the ignominy of failure on the part of millions of children have long-term deleterious effect on the personality of the individual and the matrix of society. It would be better to reward group performance so as to convey the message to everyone that excellence in group work rather than individual effort should be the target.

#### **6. Absence of Academic Ethos**

Adequate time, staff, accommodation, and its maintenance funds, pedagogical equipment, playgrounds are essential pre-requisites for effective curriculum transaction but, unfortunately, an overwhelming majority of schools do not have even the minimum essential facilities. It is a matter of great concern that the number of teachers with a sense of commitment is gradually shrinking while cynicism, feelings of helplessness and hopelessness are on the rise. Lack of adequate infrastructural facilities, rigid administrative structures and growing cynicism are responsible for the absence of academic ethos in majority of schools.

The methods of teaching used by majority of teachers are devoid of any type of challenge for the students. Transmission of information rather than experimentation or exploration or observation characterises the teaching-learning process in most of the classrooms. We have no

reason to believe that there is something wrong with our children, rural or urban. Luckily they have not compartmentalised knowledge; they are interested in seeking understanding rather than mere information. As they are educated by us, while they grow older, freshness goes away, as does romance and curiosity. Before anything is learnt they want to find out why they need to know. Must we, in the name of so-called 'proper education' go on committing the murder of their innate desire to discover and to learn on their own ?

Children are not allowed to observe and explore natural phenomena, but at the same time they are also not provided opportunity to explore the world of books. The concept of a library as a readily available resource for learning simply does not exist in most schools. Even those rare schools that do happen to have a library stock little more than copies of prescribed textbooks, often stored behind locked doors. If children are to be prepared for experiencing the beauty and richness of nature and the fascination of ideas without feeling the curricular load, priority has to be given to developing school libraries and their adequate and appropriate utilisation.

Similarly science laboratories even in the few cases where they are adequately equipped are not used for experimentation and discovery. A laboratory is not perceived as a place where children can conduct even those experiments which are not prescribed in their syllabi and come out with novel observations that need exploratory frameworks. The main purpose of a laboratory programme is to visualise children's natural talents and develop their ability to learn through observation and exploration. Over-regimentation of prescribed experiments with the entire emphasis on getting the final result, is contrary to this spirit. Laboratories should be conceived as exploratories, and schools should have the freedom to structure experiments to suit the needs of their children.

## IV

### *Recommendations*

We have come to the conclusion that the problem of the load on school children does not arise only from over-enthusiastic curriculum designers, or poorly equipped teachers, or school administrators, or book publishers, or district, state or central education authorities. Yes, what all these groups, agencies and administrators do can exacerbate or alleviate the problem. But, there is a deeper malaise in our society, which impacts our young children. If we continue to value a few elite qualifications far more than real competence for doing useful things in life, and if the economic distance, between those who can manage to cross some academic hurdles and those who can't, continues to widen, we will probably continue to spend our effort in designing hurdles, instead of opportunities for children to learn with joy. As the body of the Report analyses, a major problem is connected with the notions of 'knowledge explosion' and the 'catching up' syndrome. We believe that these problems cannot be fully addressed through easily manageable administrative actions. They need wider discussions because they are centrally connected with images of our civilization, self-esteem and societal goals. Such a wide discussion can come about through publication of this Report, and through a set of seminars, meetings and media discussions. Academics, thinkers, need to pour over this basic problem.

The question of medium of instruction, particularly in early life, will not be fully resolved till the time our dominant and externally connected sections of society continue to give more importance to elementary graces in a foreign language, than to intimate connections with the 'vernacular' knowledge which our children gain during every week of their growing up before they go to school. It is because of this reason that we have restrained ourselves from repeating the recommendation that mother tongue alone should be the medium of instruction at the primary stage.

1. A number of organisations and departments organise competitions at district, state and national level for students in various fields such as school subjects, exhibitions, essay writing, elocution, etc. Perhaps

the spirit behind these activities is to recognise and reward the talent in diverse fields. But, unfortunately this tends to produce somewhat unhealthy singling out of people for their brief moment of glory. Competitions where individual achievement is rewarded need to be discouraged since they deprive children of joyful learning. However, group activities and group achievements must be encouraged and rewarded to give a boost to cooperative learning in schools.

2. (a) The process of curriculum-framing and preparation of textbooks of decentralised so as to increase teachers' involvement in these tasks. Decentralisation should mean greater autonomy, within state-level apparatus, to district-level boards or other relevant authority, and to heads of schools and classroom teachers to develop curricular materials on their own, best suited to the needs of local environment. All the schools be encouraged to innovate in all aspects of curriculum, including choice of textbooks and other materials.

(b) Voluntary organisations with a specific commitment to pedagogical innovations within the formal or non-formal system be provided greater freedom and support in development of curriculum, textbooks and teacher training. A suitable and adequate mechanism be evolved for wider dissemination of the experiences of such organisations.

(c) We endorse the idea of setting up education committees at village, block and district level to undertake planning and supervision of schools under their jurisdiction.

(d) Sufficient contingency amount (not less than 10 per cent of the total salary bill of the school) be placed at the disposal of heads of schools for purchase, repair and replacement of pedagogical equipment.

3. The culture of writing textbooks be changed so as to involve a much large number of teachers in the preparation of textbooks. The scientists and experts in various disciplines may be associated with the preparation of textbooks as consultants and not as writers of the books. Initiative in this regard should rest with groups of enlightened and innovative teachers who should be provided training in book writing.

4. At least three parallel systems of school education (syllabus, textbooks and examination) are running concurrently in different states. In each state majority of schools are affiliated to the State Board of Education while a few are affiliated to either CBSE or Council for the Indian School Certificate Examination (CISCE). The schools affiliated to CBSE in the states other than Delhi enjoy the prestige of being elite schools. The CBSE curriculum becomes a trend-setter for the State Boards leading to heavier curriculum for majority of children. Therefore, the committee recommends that jurisdiction of CBSE be restricted to Kendriya and Navodaya Vidyalayas and all other schools be affiliated to the respective State Boards.

5. (a) Appropriate legislative and administrative measures be adopted to regulate the opening and functioning of early childhood education institutions (pre-schools). Norms regarding accommodation, staff, apparatuses, play materials be laid down for the recognition of these schools. It should be ensured that these institutions do not perpetrate violence on young children by inflicting a heavy dose of 'over-education' in the form of formal teaching of Reading, Writing and Numbers. The practice of holding tests and interviews for admission to nursery class be abolished.

(b) Norms for granting recognition to private schools be made more stringent. This will prove conducive for improving the quality of learning on the one hand and arrest growing commercialisation on the other. The norms, thus developed, be made uniformly applicable to all schools including the state-run institutions.

6. There is no justification for torturing the young children by compelling them to carry very heavy bags of books everyday to schools. Textbooks should be treated as school property and thus, there should be no need for children to purchase the books individually and carry them daily to homes. A separate time-table for the assignment of home work and for the use of textbooks and notebooks be prepared by the school and be made known to the children in advance.

7. The nature and character of homework needs a radical change. In the primary classes, children should not be given any homework, save for extension of explorations in the home environment. In the upper primary and secondary classes, homework, where necessary, should be non-textual, and textbooks, when needed for work at home should be made available on a rotation basis.

8. The existing norm for teacher-pupil ratio (i.e. 1:40) should be enforced and an attempt should be made to reduce this to 1:30, at least in the primary classes, as a basis for future educational planning.

9. Greater use of the electronic media be made for the creation of a child-centred social ethos in the country. A regular television programme addressed to students, teachers and parents and possibly called 'Shiksha Darshan' be launched, along the lines of the 'Krishi Darshan' programme.

10. (a) Inadequate programme of teacher preparation leads to unsatisfactory quality of learning in schools. The B.Ed. programme should offer the possibility of specialisation in secondary or elementary or nursery education. The duration of the programme should either be one year after graduation or three-four years after higher secondary. The content of the programme should be restructured to ensure its

relevance to the changing needs of school education and to make it more practicum-centred. The emphasis in these programmes should be on enabling the trainees to acquire the ability for self-learning and independent thinking. Pre-service teacher education programme, being a professional course, has to be a rigorous, thorough and intensive programme. Therefore, B.Ed degree courses by correspondence be derecognised.

(b) The continuing education of teachers must be institutionalised. The organisation of inservice education programmes and other activities aimed at professional growth of teachers be systematically designed and conducted imaginatively.

11. The public examinations taken at the end of Class X and XII be reviewed with a view to ensure replacement of the prevailing text-based and 'quiz type' questioning by the concept-based questioning. This single reform is sufficient to improve the quality of learning and save the children from the tyranny of rote memorisation.

12. (a) A project team with a number of sub-groups be set up in each state to examine the syllabi and textbooks for all school classes. The sub-groups be required to decide the following:

- i) The minimum number of topics required to be taught.
- ii) The minimum number of concepts to be introduced within each topic.
- iii) The total time needed for teaching this minimum number of concepts comfortably by a teacher in the total working days realistically available in a year.

(b) Mathematics curriculum for primary classes in all parts of the country be reviewed with a view to slowing down the pace at which children are required to learn basic mathematical concepts, and broadening the scope of primary mathematics to include areas other than number work (e.g. space- and shape-related concepts and problem solving). The tendency embedded in the syllabi and textbooks of primary mathematics to accelerate children's mathematical skills by teaching them mechanical rules at the expense of understanding and intelligent application ought to be discouraged in future syllabi and texts.

(c) Language textbooks should adequately reflect the spoken idiom. An attempt should be made in future textbooks to give adequate representation to children's life experiences, imaginary stories and poems, and stories reflecting the lives of ordinary people in different parts of the country. Pedantic language and excessive didacticism ought to be avoided.

(d) Science syllabi and textbooks in the primary classes should provide

greater room and necessity for experimentation than they do at present. In place of didacticism in areas like health and sanitation, the texts should emphasise analytical reflection on real-life situations. A great deal of trivial materials included in primary-level science texts should be dropped.

(e) The syllabi of natural sciences throughout the secondary and senior secondary classes be revised in a manner so as to ensure that most of the topics included are actively linked to experiments or activities that can be performed by children and teachers.

(f) Besides imparting knowledge of history and geography, the social sciences curriculum for Classes VI-VIII and IX-X should convey the philosophy and methodology of the functions of our socio-political and economic system and enable the students to analyse, understand and reflect on the problems and priorities of socio-economic development. The repetitious nature of history syllabus should be changed. The history of ancient times should be introduced for systematic study in secondary classes (IX and X). The history syllabus for Classes VI-VIII should focus on the freedom struggle and post-independence developments. The civics, as it is taught today, puts a great load on children's capacity to memories. Therefore, it may be dropped in its present form and be replaced by 'contemporary studies'. The study of geography be related to contemporary reality.

## APPENDIX

F. No.11-20/91-Sch. 4  
Government of India  
Ministry of Human Resource Development  
Department of Education

New Delhi, dated 1.3.1992

### ORDER

*Subject* : Constitution of a National Advisory Committee to suggest ways to reduce the academic burden on school students

The ever-increasing burden of academics, particularly at junior classes in schools, is assuming alarming proportions. The growing tendency of overloading the young children is turning the process of learning into a drudgery. The measures such as, formal recognition and weightage to sports and games and co-curricular and extra-curricular activities, more of outdoor and more mutually beneficial interaction of students with the community, etc. could be the broad directions that need to be pursued. The Minister for Human Resource Development has, therefore, decided to set up a National Advisory Committee which will suggest the ways to reduce the academic burden on school students.

2. The terms of reference of this Committee will be :

To advise on the ways and means to reduce the load on school students at all levels, particularly the young students, while improving quality of learning including capability for life-long self-learning and skill formulation.

In doing this, the Committee may

- i) examine all aspects related to curricula, entrance criteria and exit attainments at various levels and also
- ii) look at the impact of examinations, admissions to higher education, institutions, including professional courses.

3. The Committee shall consist of the following :

i) Prof. Yash Pal  
Former Chairman  
University Grants Commission

*Chairman*

ii) Prof. Krishna Kumar  
Central Institute of Education  
Delhi University, Delhi

*Member*

iii) Prof. T. S. Saraswathi  
Head  
Department of Child Development  
M. S. University of Baroda  
Baroda

*Member*

- |       |   |                         |
|-------|---|-------------------------|
| iv)   | Ms. Dina Guha<br>Psychologist<br>E-4/9 Ben Nevis<br>Bulabhai Desai Road<br>Bombay                               | <i>Member</i>           |
| v)    | Smt. Vibha Parthasarathi<br>Principal<br>Sardar Patel Vidyalaya<br>New Delhi                                    | <i>Member</i>           |
| vi)   | Dr V. G. Kulkarni<br>Director<br>Homi Bhabha Science Centre<br>Tata Institute of Fundamental Research<br>Bombay | <i>Member</i>           |
| vii)  | Prof. Poromesh Acharya<br>Indian Institute of Management<br>Calcutta  | <i>Member</i>           |
| viii) | Dr G. L. Arora<br>Director, SCERT<br>Varun Marg, Defence Colony<br>New Delhi                                    | <i>Member-Secretary</i> |
4. The Committee shall devise its own procedures and methodology of work.
  5. The Committee will submit its report within six months.
  6. TA/DA to the members of the Committee as per usual rates will be paid by the NCERT.
  7. The secretarial assistance and other services to the Committee will be provided by the NCERT.

D. M. de REBELLO

*Joint Secretary to the Government of India*

#### NOTE

Appendices giving details of the meetings/workshops/seminars organised and names of the teachers, educationists, administrators, parents, etc. who participated in the deliberations are under preparation and will be brought out in a separate volume.



सत्यमेव जयते

Government of India  
Ministry of Human Resource Development  
Department of Education  
New Delhi

