Curriculum Load at the School Level

A Quick Appraisal

REPORT OF THE NCERT WORKING GROUP
ON CURRICULUM LOAD

एनसीईआरटी
NCERT

राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद्
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PREFACE

The question of curriculum load has been engaging the attention of educationists, parents, teachers and students in many countries of the world for quite sometime past. In India the problem was first felt in 1975 soon after the introduction of new curriculum under the 10+2 pattern of education. The Ishwar Bhai Patel Committee was appointed in 1977 to review the curriculum that was introduced in the wake of 10+2 pattern of education. The committee suggested deletion of a few topics from the syllabi of different subjects. The problem was discussed time and again on various forums even after the recommendations of the Patel Committee were implemented. NCERT set up an in-house Working Group in 1983 to make a quick appraisal of present curriculum from the point of view of load.

In order to identify and study the various dimensions of curriculum load, the Working Group held a series of formal and informal meetings with a large number of heads of schools, supervisors and educational administrators. A survey regarding assessment of curriculum load was conducted in a selected number of primary and secondary schools in Delhi. The responses of teachers, parents, students and heads of institutions were obtained through structured questionnaires. A workshop attended by teachers, subject experts, curriculum workers and researchers was organised to analyse the textual materials which are being used at present in schools. Later on, the scope of the investigation was extended to four more states, namely, Rajasthan, Orissa, Madhya Pradesh and Karnataka. A report based on all the exercises attempted by the Working Group was presented at a National Seminar which was attended by a number of eminent educationists and high level functionaries of State Education Departments and State Education Boards. Deliberations of the seminar enabled us to formulate recommendations for handling all aspects related to curriculum load.

The present exercise was initiated with a limited purpose of ascertaining the load of present curriculum but it has turned out to

be an overall review of total curriculum as it was realised that the concept of curriculum load was central to all curriculum discussions. Before making a curriculum decision, a curriculum developer cannot help but ask himself whether his decision would enhance the load of curriculum on pupils or not. The question of curriculum load is expected to remain a live issue for many years to come because continuing knowledge explosion coupled with our desire to ensure international comparability of educational standards will continue to place more and more demands on the school curriculum. The situation can be kept under control by providing the requisite inputs and by improving the quality of curriculum transaction. It might be added that the existence of variegated types of schools and non-availability of adequate instructional time, make the problem more complex.

I am grateful to all the members of the Working Group, particularly Prof. A.K. Jalaluddin for the hard labour which has gone into the study. I am also thankful to Dr. G.L. Arora, convener of the Working Group, who along with his colleagues had the major responsibility of organising the whole exercise including analysis of data and preparation of the report.

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CHAPTER I

Introduction

A. The Context

Curriculum occupies a central place in the total educational endeavour of society because its educational development depends to a great extent on the type of curriculum which it develops and the way this curriculum is implemented in educational institutions. In India, however, the past few years have witnessed conflicting tendencies and a few controversies in the area of school curriculum. One such controversy relates to the question of educational standards. It is often pointed out that standards of education in our country are not comparable with those of developed countries. But any attempt to raise educational standards simply by adding more and more content may lead to the problem of curriculum load.

To improve educational standards in the country, the Education Commission (1964-66) made a number of recommendations for the renewal of school curriculum. The recommendations of the Commission were considered by the Government of India and a resolution on the National Policy of Education was adopted in 1968, which highlighted the urgency to adopt the 10+2+3 pattern of education throughout the country. To implement the recommendations of the Education Commission and also to concretise the guidelines contained in the policy resolution, the National Council of Educational Research and Training published a document entitled 'The Curriculum for the Ten Year School—A Framework' in 1975.

The NCERT document on curriculum had recommended that in order to achieve the broad objectives of education, the curriculum for the Ten Year School must include the study of three languages, science, mathematics, social science, work experience,

aesthetic activities and physical education. The study of science and mathematics was made compulsory for students up to class X. The content of science was drawn from three disciplines, namely, physics, chemistry and biology. Likewise, it was visualised that the content of social science should be drawn from history, geography, civics, economics, sociology and psychology. Arts, work experience, health and physical education were also made compulsory components of general education upto class X. Thus, all the areas considered to be essential for a broad-based general education, were made compulsory for all and no provision was made either for diversification of courses or additional optional subjects at any stage of school education.

The response to syllabuses and textbooks prepared under the 10+2 pattern was by and large salutary. However, some adverse reactions were voiced by some sections of the public, some teachers, some parents and some pupils. One of the main criticisms was that the new curriculum, while highlighting the importance of the new content areas, particularly science and mathematics as part of general education upto class X, did not take into account the existing limitations of resources—human and material—of schools, particularly those in the rural areas. It was argued that the scheme of examination contained too many subjects for study, the textbooks were too many and too voluminous and, therefore, no time was left for self-study and participation in co-curricular activities. In order to examine the issue of curriculum load, a Review Committee was appointed by the then Minister of Education in his capacity as President of NCERT, in 1977 under the chairmanship of Shri Ishwarbhai J. Patel. The Committee constituted several sub-committees to review the various aspects of 10+2 curriculum, the syllabuses prepared by NCERT and prescribed by CBSE, as well as the textbooks published by NCERT. The Committee endorsed the Curriculum Framework of NCERT but replaced work experience with socially useful productive work as an area of general education.

As the sub-committees identified several content areas in the secondary level textbooks as difficult, the Committee decided to delete these portions from the NCERT textbooks without giving much thought to imbalances in curriculum that might crop up due to these deletions. The Committee also recommended creation of

two different courses (A and B) for the secondary level science and mathematics, thereby, introducing differentiated courses in general education which is contrary to the recommendations of the Education Commission and the NCERT Curriculum Framework for the Ten Year School.

The NCERT books in science and mathematics were revised to reduce content. The CBSE prescribed the NCERT science book for B course and mathematics textbook for A course and recommended textbooks of private publishers for alternative courses.

Regarding social science, the Committee recommended deletion of economics as part of its curriculum. Likewise, a few topics/chapters were deleted from the syllabi/textbooks of different subjects. However, in view of the increased time allocation for socially useful productive work, the Committee recommended decreased allocation of time for other subjects. This practically neutralised the relief given to the students. Thus, the recommendations of the Committee were not received enthusiastically by educationists and teachers as it was thought that the problem of curriculum load had not been solved in any effective manner. Moreover, the approach followed by the Committee to reduce the load also evoked criticism, specially from the educationists. It has been pointed out that the approach followed by the Committee was not based on empirical evidence. Therefore, it was felt that there was need to re-examine the whole question of curriculum load.

The question of curriculum load in schools has for quite some time attracted the attention of educationists and community leaders alike. In this regard, much concern has from time to time been voiced by parents, teachers and students also. In view of the rising concern with the pressing issue of curriculum load, NCERT initiated suitable action in the matter in the following three phases :

(1) In-house assessment of the curriculum load taking an overall view of the totality of school education for the first ten years—classes I-X on the basis of the data available.

(2) Organisation of quick appraisal of the field situation through scientific sample surveys and perception studies,

(3) Organisation of a National Seminar for the presentation and deliberation on the in-house assessment and field survey reports with the objective of evolving a national consensus in favour of appropriate follow-up measures.

B. The Effort

To carry out the tasks mentioned above, a Working Group was constituted in NCERT in July 1983, with the Director as Chairman. The following were the terms of reference :

1. To prepare an authentic national data base on the organisation, process and content of school education up to class X. The data should include the following :
   - the number of working days per year averaged over last five years and the total time available annually for teaching each subject (or sub-subject)
   - total periods per day and the duration of each period
   - the average number of students in each section or class
   - the pre and in-service training status of the teachers
   - the availability of teachers with the required basic educational qualifications for teaching a particular subject
   - the extent of availability and use of school library, laboratory and other basic teaching and learning aids
   - the area and agency-wise distribution of the students and teachers according to the above indicators.
2. To make a comparative study of the syllabuses, textbooks and other teaching-learning material prescribed by the Central and State Boards of Education and other concerned agencies with some indication of the horizontal and vertical linkages between the basic skills, competencies and the concepts identified as the expected learning outcomes at the different grades, readability, treatment and presentation of the textual and other printed material. This exercise may also indicate the mismatch, if any, between the cognitive demand of the major concepts and topics prescribed for an age group of the students and the mental competence of an average student.

3. To analyse the existing practices in teaching and learning in the actual classroom and home situation and the volume and nature of homework assigned to the students. This exercise may also include an assessment of the nature and scope of the tests given to the students.

4. To evolve a methodology for conducting a perception survey and to conduct a perception survey taking representative samples of students, teachers and parents in some selected areas about the curriculum load in the overall context of school education with responses to some specific issues.

5. To suggest appropriate strategies for handling the problem of curriculum load at the level of curriculum development workers and specialists, classroom organisation and the delivery system, and in the context of teacher training and devolution of the responsibility of resource development down to the level of the schools.

6. To organise a National Seminar to focus attention on the question of curriculum load with the above exercises as the data and information base for formulation of appropriate recommendations and follow up programmes and projects.

7. To finalise the report based on the recommendations of the National Seminar for consideration and implementation by the concerned authorities.

To begin with, the Group decided to address itself to some specific tasks such as operationalisation of the concept of curriculum load, development of a practical methodology for its assessment, evaluation of the existing curriculum in a few States by following the methodology evolved and lastly formulation of ways and means to tackle the problem.

1. Identification of Variables

As a first step, the Group analysed the phenomenon of curriculum load by identifying its various dimensions. It was felt that this exercise will prove helpful for planning the study on scientific lines. The following were identified as major factors indicative of curriculum load on pupils :

(*a*) *Length of the Prescribed Course vis-a-vis Availability of Time*

Length of the prescribed course is an important dimension of curriculum load. If the prescribed curriculum is too lengthy to be completed in time by an average teacher under normal conditions, then the curriculum will be considered as heavy. It has been observed that the assessment about the length of a prescribed course varies with the increase or decrease of time allocation in the school time-table. The point of time towards the end of the academic session when majority of teachers manage to complete the course is an indicator of the curriculum being judged as heavy or otherwise.

(*b*) *Difficulty Level of the Course Content vis-a-vis Mental Level of the Pupils*

Mere length of the prescribed course, in isolation, cannot be considered as the only valid criterion of curriculum load. It is a matter of common observation that sometimes 15 topics will put less burden on pupils than 10 topics if the latter abound in such concepts as are beyond the comprehension level of majority of pupils. Same is true of the number of pages in the prescribed textbooks. Concepts or topics not related to the previous learning or experiences of children are considered as difficult from students' point of view.

(*c*) *Language used in the Textbooks*

Language is an important factor which impinges on curriculum load. Difficult concepts, if presented in simple and straight forward language put less burden on pupils while simple concepts may put unnecessary burden on them if these are presented in a style which is involved, verbose and rhetorical.

(*d*) *Curriculum Load in Relation to Some Other Variables*

Besides the above mentioned dimensions there are also a number of other factors which are linked with the problem of

curriculum load. Among them, teachers, pupils, schools and societal conditions are the most important. For instance, educational and professional qualifications of teachers, their willingness as much as their competence to make use of progressive methods of teaching, and provisions available for updating their knowledge are relevant questions in the context of curriculum load. The organisational climate of the school, facilities available in the school, extent of utilization of available facilities are also considered to be related to the question of curriculum load. Some aspects of school management, such as number of working days available in an academic year, duration of the school day, availability of trained teachers in adequate number, provision for substitute teachers, etc. also affect the question of curriculum load. The harsh reality of Indian educational situation is that our teaching is, by and large, examination oriented. Parents, teachers and students—all are worried about the performance of students at the annual examination. It is a well known fact that scholastic areas included in the school curriculum get precedence over the non-examination subjects. Therefore, it was felt that the questions of facilities available and their utilisation, curriculum management and examination system need to be studied in relation to curriculum load.

2. Field Work

The Working Group planned its work in two phases. In the first phase the study was confined to the Union Territory of Delhi only. The work during the first phase, involved informal meetings with a large number of educational functionaries and a series of formal meetings with heads of primary and secondary schools. A survey of the assessment of teachers, parents and students was also conducted. Their responses were obtained through structured questionnaires from teachers, students and parents. The analysis of data was based on responses obtained through questionnaires from 85 secondary school principals and primary school headmasters, 1080 teachers of classes III to X, 760 students of classes IX and X, 610 parents whose wards are studying in classes IX. A workshop attended by as many as 57 principals, headmasters, practising teachers, curriculum workers and researchers was

organised for 6 days. The main purpose of the workshop was to analyse the textual materials in the context of curriculum load. Another purpose of the workshop was to cross-validate the findings of the survey. Analysis of the data obtained through various sources revealed that conclusions of the workshop were in conformity with the findings of the survey.

In the second phase, work on the study was extended to four more states, namely, Rajasthan, Orissa, Madhya Pradesh and Karnataka. In order to make quick appraisal of the curriculum scene in these states, it was felt that a planned and comprehensive workshop could throw sufficient light on the problem of curriculum load.

It was decided that besides analysing the textual materials, the workshops should also discuss the following aspects related to the question of curriculum load :

(1) Facilities available in schools and the extent of their utilisation.
(2) Curricular provisions and management of curriculum.
(3) Impact of examination system on curriculum transaction.
(4) Instructional techniques used by teachers of different states.
(5) The nature, purpose and quantum of home work.
(6) Textual materials such as textbooks, workbooks and supplementary readers.

Workshops on assessment of curriculum load were organised from September 1 to September 5, 1984 at the four Regional Colleges of Education at Ajmer, Bhubaneswar, Bhopal and Mysore. In these workshops, curriculum prescribed in the states of Rajasthan, Orissa, Madhya Pradesh and Karnataka were examined by a group of teachers, principals, curriculum workers and educational administrators.

Interactions with a large number of teachers, administrators and subject specialists, detailed discussions with about 00 heads of primary and secondary schools, analysis of data collected from teachers, students and parents through the use of questionnaires, analysis of textual materials prescribed in Karnataka, Rajasthan, Madhya Pradesh, Orissa and Delhi, and observation of the working of some schools provided a rich haul of data.

C. LIMITATIONS

Since the study was to be completed in a short time, the methodology adopted had some limitations. For example, the size of the sample in Delhi could not be extended beyond 85 (secondary and primary) schools and the data obtained through structured questionnaires could not be supplemented by collection of additional information, through inter-personal interaction with adequate number of functionaries responsible for school education in the sample area except the principals, headmasters and teachers. The exercise could not be undertaken in the states and union territories other than the states of Karnataka, Rajasthan, Madhya Pradesh and Orissa. Only one exercise on curriculum assessment could be attempted through a comprehensive workshop in these states. Analysis of instructional materials from the point of view of their cognitive demands on pupils requires in-depth, long term research which was not within the purview of the present study.

In spite of these limitations, it was felt by the Working Group that for the quick appraisal of curriculum, the major dimensions of curriculum load could be qualitatively assessed by following the methodology described above.

CHAPTER II

Findings and Conclusions

The problem of curriculum load at times emanates from unrealistically high aspirations of parents, students, teachers and schools and also from the competitive spirit that has afflicted all spheres of our social life. Percentage of marks obtained at the annual examination has become the sole indicator of a student's worth. Many schools, specially un-aided recognised and unrecognised schools, require their students to buy books that are not prescribed by the Education Department because it is felt that these may help them in showing better performance in the examinations. To ensure bright future, most of the students have to burn the proverbial mid-night oil and in some cases parents are compelled to engage private tutors for their children.

Curriculum has to be responsive to the changing realities and growing demands of society. Occasionally there are demands for inclusion of new topics in the school curriculum. The desire to accelerate the process of modernisation and the aim to improve the educational standards so as to ensure international comparability on the one hand and inadequacy and uneven distribution of physical and human resources on the other are some of the factors which impinge upon curriculum load.

Analysis of a variety of data obtained from the four states and one union territory has supported the contention that curriculum development including its implementation and evaluation is a multi-dimensional phenomenon. Therefore, any discussion on the question of curriculum load has to encompass all aspects of the total endeavour made under the name of curriculum development and transaction. Experiences of the Working Group have, therefore, been synthesised around the following aspects of curriculum endeavour :

A. Physical Facilities and their Utilisation

The quality and extent of facilities provided in the school are relevant in the context of curriculum load. It has been observed that majority of schools in all the states, particularly primary schools and schools in rural areas do not have adequate number of teachers, classrooms and most essential teaching aids such as blackboard, chalk, maps, etc. Several high schools do not have suitably equipped libraries, science laboratories, and other essential audio-visual aids. Teachers find it difficult to transact the curriculum effectively without the requisite support materials which facilitate understanding of basic concepts on the part of students. Many a time absence of essential facilities leads to overcrowding in classes and loss of instructional time. It is obvious that the quality of output will depend to a large extent on the quality of inputs.

Teachers and schools continuously demand more and more facilities which are indeed woefully inadequate but there is also a disturbing aspect of this unfortunate situation. It has been observed that the majority of teachers are reluctant to fully utilise available facilities to ensure effective curriculum transaction. Science equipments, books, charts, models, films etc., where available, are not fully used in majority of schools, particularly in primary and middle schools. Optimum use of existing facilities, howsoever inadequate, may improve the situation to a great extent. The main reason for this unfortunate situation appears to be the prevalence of examination oriented teaching.

The perception of curriculum load also depends on the socio-economic status of the parents and on the quality of facilities available in homes. The survey conducted in Delhi schools has revealed that majority of homes in Delhi do have facilities like television, radio, newspapers, magazines, dictionaries and atlas. These would no doubt help the children in their educational advancement by widening their mental horizon. However, the data have shown that where facilities do exist, these are not fully utilised.

Teachers expect the parents to send their wards to school in time and to help them in completing the home work assigned. Majority of students, being first generation learners, their parents

are not in a position to help them in their studies at home. The school programmes should be such as will enable the students to cope with the school work on their own.

B. Curriculum Organisation and Materials

School curriculum comprises scholastic areas like languages, social sciences, physical sciences and mathematics on the one hand and non-scholastic areas like work experience, physical education, etc. The former are generally examination subjects while the latter are non-examination areas. It has been observed that non-examination areas are not taken seriously either by students or by teachers. Suitable steps are needed to set things right in this regard.

First Language : The existing curriculum of first language from primary stage to secondary stage, has been found to be quite manageable in all the five states. But the pupils' attainment in the mother tongue at the primary stage has been found to be inadequate. This is based on the results of the Reading Ability Test which was given to 370 students of class II and V. The use of different forms of numerals in different books also proves to be a source of difficulty for the pupils. At the primary and upper primary levels, children find it difficult to comprehend and appreciate the poems that are written in language which is not contemporary. Likewise, students of class VI and VII find it difficult to understand and appreciate the poems which have too much of symbolism in them.

English : The study of English, as second language, is introduced in class VI in Delhi, Rajasthan and Madhya Pradesh while it is introduced in class IV and V in Orissa and Karnataka respectively. In some states, curriculum of English, specially in classes VI to VIII, seems to be somewhat difficult to teachers as well as to students. It has been highlighted that this is due to teachers' inadequate command over English and lack of mastery of the elements of language by students in the initial years of language learning. Most of the teachers conceive of English as a 'content' subject like history, geography, economics, etc. They generally follow the traditional translation-cum-grammar method while teaching the textbooks. They lay emphasis on comprehension of

the prescribed text and make little effort to develop the four basic skills of language i.e. listening, speaking, reading and writing. Ineffective methods of teaching create a wide gap between the actual attainments in English and the expected linguistic goals.

Third Language : The study of third language is introduced in class V or VI in different states. In Rajasthan, Madhya Pradesh and Delhi, majority of students take up Sanskrit while in Orissa and Karnataka they study Hindi as third language. But it is given a low weightage in school curriculum, both from the point of view of time and marks. In the school timetable only two or three periods per week are allocated for its teaching. This is not found sufficient for the teaching and learning of a third language. Moreover, many students have little motivation to study third language seriously, specially when they know that they can be promoted to the next higher class without getting through the examination held in it. They, thus, do not find it very relevant.

Science : The present curriculum in science for classes III to X in all the states has been found to be manageable except for classes VI to X in Delhi where it is considered to be somewhat lengthy. However, a few topics included in the syllabi of different classes in various states have been considered to be difficult for pupils. For example, Gravitational Force, Electricity, Magnetism, Rocks, Density are the topics which are included in the courses of classes III to V but these are considered to be difficult for pupils. In classee VI to VIII topics entitled Hydraulic Machine, Hydraulic Brake and numericals based upon it, application of Newton's first law of Motion, Specific Heat, Latent Heat and its numericals, Conservation of Mass, Chemical Equations, Metals, Nervous system, Mendel's law up to F_2 generation, prove difficult for pupils of different classes, the syllabi of which include these topics.

At the secondary stage, in Delhi, course 'A' is considered to be ambitious while course 'B' is found to be alright as far as difficulty level of the course content is concerned. The following topics in the Physics and Biology portions of the 'A' course are difficult for the students (i) Mathematical derivation of Mirror and Lens Formulas, numericals based on these formulas ; (ii) study of Coulumb's law ; (iii) numericals based on Relative Density ; (iv) comparative anatomy and physiology of Hydra, Earthworm, Cockroach, Frog and Man.

The present curriculum of science draws its subject matter from the disciplines of physics, chemistry and biology. By and large, disciplinary approach rather than integrated approach is followed in the organisation of its syllabus as well as its teaching. Thus, in place of one integrated area of science, there is only a loose combination of three disciplines. In Rajasthan, general science is taught as a core subject while physics, chemistry and biology are taught as elective subjects. In all the states, almost equal weightage is given to the three branches except in Madhya Pradesh where biology is given 50 per cent weightage in terms of marks.

It has been observed that methods of teaching used by majority of teachers are far from satisfactory. Reading the book para by para, lecture method and lecture-cum-discussion method generally find favour with most of the teachers. Demonstration, observation and experimentation are sparingly used, specially at the primary and upper primary stages. The students are seldom encouraged to undertake the activities suggested in the textbooks. In a large number of schools in Karnataka, Orissa, Rajasthan and Madhya Pradesh science graduates are not available to teach science at the upper primary or middle stage. At the primary stage, even those teachers have to teach science who themselves have not studied this subject.

The NCERT and Education Departments of different States have recommended 6-8 periods per week for the teaching of science. However, it has been found that government schools in Delhi allocate 8 or 9 periods while central schools and public schools allot 10-12 periods for science in a week. This suggests that the schools find the course too lengthy to be completed in the time recommended or prescribed. In other states too, it was found that periods meant for non-scholastic areas are sometimes utilized for the teaching of science.

Mathematics: Mathematics is a compulsory subject in school curriculum from class I-X in all the states. The existing curriculum in mathematics for classes III to X is quite manageable in the five states. However, the prescribed course for class VII in Orissa and for classes VIII to X in Karnataka is found to be slightly heavy for the pupils. In the case of Delhi, Binary System in class V, introduction of Twin primes and Odd primes and Symmetry in

class VI ; solution of inequations in class VII, are considered to be difficult for pupils. At the secondary stage, mapping, graphs of quadratic polynomials are considered to be difficult for pupils. However, the teachers in Delhi suggested strengthening of course by increasing number of problems in exercises.

In some states the curriculum in mathematics of one stage is not articulated with that of the next stage. This results in wide gaps between the courses prescribed for different stages. Further, in some states, teachers who have not studied mathematics up to the higher secondary level have to teach the subject at the middle stage.

Social Studies : The present curriculum of social studies draws its subject matter from the disciplines of history, civics and geography. At the primary stage, it is taught as a part of environmental studies. As in science so also in social studies, disciplinary approach rather than integrated approach is by and large followed in the primary, middle and secondary stage. In place of one integrated area, it is just a combination of three areas. The same teacher finds it difficult to teach all the three branches. Many a times, teachers with adequate background in geography are not available.

It has been observed that the prescribed curriculum in all the five states is not difficult for the pupils except for a few topics in one class or another. However, keeping in view the present allocation of 6 periods in class VI-VIII and 7 periods in classes IX and X, the prescribed curriculum in Delhi from class VI-X, proves to be somewhat lengthy.

Language used in the textbooks of science, social science and mathematics is sometimes more difficult than the language used in language textbooks which are first written in one language and are then got translated into another. For instance, books of science and social science used in Delhi schools prove difficult for the students because of inappropriate literal translation.

Prior to the introduction of 10+2 pattern of education the duration of general education was 8 years and diversification of courses started in class IX. But under the new pattern the duration of general education has been extended by two more years. So there was need for devising courses for the two extended years in order to ensure continuity between the courses of upper primary/

middle stage on the one hand and of secondary stage on the other. However, it has been observed that there is much overlapping between the courses of these two stages in content subjects, namely, science, social science and mathematics.

C. Management of Curriculum Transaction

Any curriculum is developed on the basis of certain assumptions. For instance, it is quite natural for the curriculum designers to assume that a minimum essential level of physical facilities, adequate instructional time, well-qualified teachers in adequate number and suitable curriculum materials will be available in all the schools. The failure to provide pre-requisites may sometimes lead to the problem of curriculum load.

The quantum of the present curriculum in the five states was determined on the basis of the assumption that 220-240 working days in an academic year would be available for its transaction. It was visualised that after reducing the days earmarked for holding terminal examinations, school functions, etc. about 200-220 days would be available for instructional work. But it has been highlighted that about 50-60 days are lost on account of examinations and tests, functions, admissions, strikes, etc. Under these circumstances, it is quite natural that the present time allocation for some subjects in some classes is considered to be inadequate.

While the duration of a school day and that of class period is considered to be a problem of management, it has an important bearing on the question of curriculum load. In Delhi, the duration of a school day is 5 hours in winter and 5 hours 30 minutes in summer while Kendriya Vidyalayas and public schools have a school day of at least 6 hours. In Karnataka and Madhya Pradesh the duration of a school day is 6 hours while in Rajasthan the duration ranges between 5½ and 6 hours. In Madhya Pradesh, the duration is only 5 hours in those schools which have to run for two shifts. The duration of a class period in Government schools of Delhi ranges between 30 and 35 minutes while it ranges between 40 and 45 minutes in Kendriya Vidyalayas, public schools and the other four states. The duration of a class period cannot be increased in those schools which have two shifts because of the limitations of time and space. Inadequate time affects the quality

of curriculum transaction because any imbalance between the quantum of the course content and the time available in the school time table compels the teachers to make use of strategies that are pedagogically not desirable. Thus, an administrative problem which has its roots in paucity of resources, leads to the emergence of a curriculum problem.

It has been observed that quite a sizeable number of teachers do not possess adequate command over their subject. This is more true in the case of teachers of English and the third language in majority of schools. This is also true in the case of undergraduate teachers teaching at the higher primary or middle stage, particularly in science, English and mathematics. It has also been observed that many teachers are called upon to teach those subjects for which they themselves are not qualified. For instance, in primary schools, a teacher has to teach all the subjects up to class V. Many teachers have not studied science even at the high school stage but they have to teach it. While such anomalies may be due to some administrative and financial constraints, they adversely affect the quality of curriculum transaction which in turn may lead to the problem of curriculum load.

It has also been observed that weakness in the school management and supervision system contributes in making the curriculum heavy for pupils. For instance, heads of schools are called upon to take classes in addition to their administrative responsibilities. In the absence of a standby teacher, either the headmaster or the teachers on duty have to take classes of teachers proceeding on leave. Thus, teaching work in number of classes gets disturbed. It has been observed that teaching work seldom takes place in the so-called 'arrangement periods' because of obvious reasons. Academic guidance is generally not available to the teachers either from the head of the institution or from the inspector or supervisor because they are administrators first and teachers afterwards.

It has been observed that size of a class in a number of schools in the five states ranges between 50 and 60. Overcrowding in classes is said to be responsible for the perception of curriculum load because it gives little time to the teachers to pay individual attention or organise remedial teaching. However, the results of the survey conducted in Delhi do not support the contention that

there is positive relationship between class size and perception of curriculum load. But in the case of teachers teaching a class of more than 45 pupils increased load in subjects like Science and English is perceived. This could be due to the nature of the subjects. Science requires practical work and English requires pattern practice and lot of oral work.

It has been seen that whenever a new curriculum is introduced, there is some sort of initial resistance which withers away with the passage of time as the teachers get used to the handling of new materials. Teachers are generally left to their own resources to use and interpret the new materials as per their experience and capacities. While inservice training of teachers considerably improves their teaching competencies, such facilities are at present very inadequate and as a result only a handful of teachers can take advantage of them.

Textbook has been the main source of learning for the majority of children in our country. However, during the past few years, the need has been felt for providing some additional textual materials to children. Workbooks and supplementary books need to be made available. But in some states only supplementary readers have been made available, that too in some classes and in respect of one or two subjects. These have been found to be quite useful by the students. Likewise, Teacher Guides, prove to be fairly good support for the teachers.

Home work is rightly considered to be an essential supplement of classroom instruction. But in order to show better pass percentage, some teachers become over-enthusiastic and assign too much home work to children. On top of it, lack of system and order makes things look heavier than they actually are. On some days, there is too much home work assigned by teachers of different subjects, while on some other days, there is no home work at all. It has also been observed that majority of teachers assign routine type of home work such as doing sums in mathematics, writing a few pages in languages, writing answers in social studies or sciences etc. which the student looks upon as a chore. There is need for assigning a variety of innovative type of home work which the students will enjoy doing.

D. Examination and Tests

The entire educational system in India is examination oriented. A student's worth is judged in terms of percentage of marks that he/she secures in a public examination. Likewise a teacher's worth is judged in terms of the percentage of his/her students getting through the examination. Therefore, the teachers adopt only those strategies which are likely to yield better results. With the majority of teachers, the sole purpose of teaching is to help the students get through the examination It is perhaps due to their preoccupation with examination results that the teachers generally make such demands as are not educationally and psychologically desirable. For instance, the majority of teachers and principals emphasise the desirability of holding public examinations at the end of primary and middle stages. They are even in favour of holding tests a few days before the final examination.

It has been repeatedly pointed out that students' attainment at the end of the primary stage is generally not satisfactory. Their acquisition of the four basic language abilities of listening, speaking, reading and writing are said to be inadequate. A large number of teachers feel that in the absence of remedial teaching at the primary stage, the present policy of automatic promotion to the next higher class is also responsible for the enhancement of the curriculum load. This policy of non-detention is based on sound principles of psychology and pedagogy because failure during the early years of schooling is a frustrating experience for the child and it may push him out of the school system. But in actual practice, it leads to a mismatch between the actual attainment level of the pupils on the one hand and the level of attainment expected of them in particular class under the existing norms on the other. Attributing the mismatch to the policy of non-detention at the primary stage is a negative way of looking at things. The teacher works under a number of constraints which prevent him from giving effective guidance to slow learners, more so he is not familiar with the strategies of formative evaluation and remedial teaching. The educational planners have also failed to clarify the educationally sound concept of non-detention.

The practice of holding unit or periodical tests aims at reducing curriculum load for pupils by making pupil evaluation a

continuous process rather than a one time affair. In addition to the annual examination the performance of students in the periodical tests is also taken into consideration while deciding their annual result. However, it has been reported that annual examination is still the mainspring of curriculum load for most of the students, though its weightage has been reduced to some extent in the matter of pupil's promotion to the next class. But frequency of class tests, specially when not planned and announced in advance, increases curriculum load for pupils.

E. Conclusions

The foregoing discussion of the results of the study leads to the following conclusions :

1. The failure to provide the pre-requisites for the effective transaction of curriculum leads to the problem of curriculum load.
2. The problem of curriculum load is more a problem of educational management and resource constraints than a problem of curriculum development.
3. Lack of order and system in any of the aspects of curriculum development and implementation, including that of home work assignment, contributes substantially to the problem of curriculum load.
4. The quality of curriculum transaction is a major determinant of curriculum load. Even a flawless curriculum, if transacted in an inappropriate manner, may prove to be heavy for pupils.
5. The problem of curriculum load is also a social problem having roots in the high aspirations of students and parents and in the widespread spirit of competition which permeates all walks of our social life.
6. The present system of examination with its emphasis on memorisation is responsible to a great extent for the problem of curriculum load.
7. Many a times, errors of judgement on the part of curriculum designers with regard to matching the cognitive demands of the subject matter with the pupils' maturity level leads to the problem of curriculum load.

8. The desire to include more and more content in order to raise educational standards, sometimes makes the curriculum ambitious.
9. Lack of coordination and articulation between the curricula of different stages and of different subjects leads to considerable overlap which should be avoided to ensure manageability of curriculum.

CHAPTER III

Recommendations

A detailed report based on the results of the work done by the Working Group was presented before a National Seminar which was attended by eminent educationists and high level educational functionaries of various states and union territories. The Seminar deliberated upon various aspects of school curriculum and made a number of suggestions to tackle the problem of curriculum load. Keeping in view the deliberations of the seminar and also those of the earlier workshops, the Working Group recommends that the following measures should be undertaken to improve the overall curriculum scenario at the school level in the country :

1. In order to develop national cohesion, integration, value orientation as reflected in our rich traditions and composite cultural heritage; in order to synthesize the above with modernisation in terms of Science and Technology and to promote a genuine Indian ethos, there is an urgent need to formulate a national core curriculum, applicable to all the schools in the country. NCERT should undertake the responsibility of developing the national core curriculum.
2. The national core curriculum, applicable to all the schools in the country should be supplemented by specific curricula to meet the local ecological, sociological, cultural, economic and developmental requirements relevant to states, districts and geographical typologies. It is recommended that national core curriculum should constitute two thirds of the total curriculum. However, the proportion may differ in respect of different subjects and different stages of education.
3. School curriculum should present a happy blend of physical culture, culture and knowledge. The knowledge component

should further comprise humanities, science and technology. The relative proportion of each component should vary at different stages of school education.

4. Curriculum should be developed keeping in view the majority of students, teachers and physical facilities available in majority of schools. There is need to check unnecessary disparities and elitism arising from the curriculum.
5. Information load, specially at the earlier stages, should be kept at a minimum. At the higher level also, practice of competitive overloading of information in the textbooks should be avoided It is recommended that there should not be more than 2 textbooks for classes I and II.
6. At least 33 per cent of the instructional time should be allocated for the teaching of mother tongue/regional language at the primary stage because proficiency in language skills will equip the child to learn the content of other subjects with ease. At the primary stage, mother tongue should be the medium of instruction.
7. Teaching of formal skills of reading and writing should not be attempted before the age of 5. But informal, joyful pre-primary schooling may be introduced, particularly for the first generation learners.
8. The language and the writing style followed in the textbooks should be easily intelligible to students. Books written in simple language help the pupils to learn things better and in less time. The non-language books should reinforce the linguistic abilities of pupils and should in no case pose additional problems of comprehension for them. When books prepared first in one language, are got translated into another language, artificial and mechanical translation should be avoided. Where translation needs to be done, the help of practising teachers should be obtained.
9. Quality of education should not be equated with quantum of curriculum content. For the development of creative thinking, it is better to cover a few topics more intensively rather than providing superficial knowledge of too many things.
10. There is a definite place for research in curriculum development particulary to ensure that the concepts introduced are compatible with the mental development of the child.

11. As the syllabi and textbooks are the concrete manifestations of curriculum, these should be of high quality. There should be a mechanism for determining the suitability of textbooks.

12. Since curriculum development is a continuous process, it should be evaluated periodically and recast in its totality. NCERT should provide academic guidance to the State Education Departments for the evaluation of their curricula, particularly from the point of view of load.

13. Keeping in view the present time allocation of 6 or 7 periods per week, the existing curriculum in social science at the secondry stage in Delhi proves to be lengthy. Besides there are some overlappings in the curriculum of middle and secondary stages. Therefore, the whole course of social science from class VI-X should be reorganised so as to remove the overlappings between the curriculum of middle and secondary stages. At the middle/upper primary stage integrated approach should be adopted.

14. The present curriculum in science for classes VI-X in Delhi has been found to be lengthy. Besides, a few topics included in the syllabuses of different classes, as mentioned on page 13 of this report, have been found to be difficult for students. At the secondary stage, Course A in general proves to be difficult for students. The topics found to be difficult should be considered for simplification and deletion from the course. At the middle stage integrated science rather than physics, chemistry and biology as such should form a part of school curriculum.

15. Two types of courses (A and B) in science and mathematics (as in the case of CBSE) at the secondary stage gives the indication that one type of course is of a higher level while the other is of lower level. Most of the students, particularly in urban areas, are attracted towards the higher level course but subsequently find it difficult to cope with the curriculum. For example, science Course 'A' is found to be heavy for pupils. This type of differentiation should be done away with as it is against the concept of general education.

Facilities

16. Minimum facilities for teaching learning such as chalk, blackboard, books, source books, maps, charts, models etc. should be provided in every school. Absence of these facilities increases the load of curriculum for pupils and teachers.
17. Overcrowding in classes increases the work load of teachers which affects adversely the quality of curriculum transaction. This may give rise to the problem of curriculum load. The optimum number of pupils in a class should be around 35.

Curriculum Transaction

18. Directorates of Education should ensure 220 working days out of which there should be at least 190 instructional days. Duration of a school day should be at least six hours, out of which five hours should be available for the transaction of curriculum.
19. Lack of order and system in any aspect of human life makes things heavier and more difficult than they are. This is also true in the case of home work and periodical tests. It should be made obligatory on the part of school to prepare and display in each class an agreed time table for home work assignment and for the conduct of periodical/unit tests. It is further recommended that no formal home work should be assigned at the primary stage.
20. Since the teacher is the major single factor in fostering teaching and learning, it is desirable that he should be suitably trained to discharge his duties effectively. Therefore, curriculum for pre-service training, both for elementary stage and secondary stage, should be simultaneously updated and intensified. Training strategies should be designed in such a way that the trainees are adequately prepared to handle the revised school curriculum. Mushroom growth of substandard teacher training colleges should be checked.
21. In-service training programmes should be organised on a continuing basis to help the teachers update their knowledge in content as well as in pedagogy. However, it may take a very long time to provide in-service training to teachers through regular contact programmes. Teacher Guides or

Curriculum Supplements should be made available to all the teachers. Proper use of mass media should be made in a big way for the continuing education of teachers.

Examination/Tests

22. There should be no public examination till class VIII. Internal formative and summative evaluation should be carried continuously with a view to diagnose pupil's weaknesses in learning. Subsequently remedial teaching for those pupils who lag behind in some aspect of learning should be arranged. Time spent by teachers on remedial teaching should be considered as part of their regular work load.

APPENDIX

National Seminar on Curriculum Load

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4.	Prof. (Mrs.) K.T. Singh	*Member*	(up to 29.2.1984)
5.	Prof. Baqer Mehdi	*Member*	
6.	Prof. G.L. Adhya	*Member*	(up to 31.7.1984)
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