CHAPTER 3
CURRICULUM DEVELOPMENT AND SECONDARY SCHOOL EDUCATION IN SCIENCE, SOCIAL STUDIES AND USE OF INFORMATION TECHNOLOGY
3.0.0 Introduction:

The curriculum is the plans made for guiding learning in schools, usually represented in retrievable documents of several levels of generality, and the implementation of those plans in the classroom; those experiences that take place in a learning environment that also influences what is learned.

3.1.0 The curriculum and the course of study:

The relationship between the curriculum and the course of study is an important one for clear understanding of curriculum programs. Curriculum and course of study are sometimes used synonymous. For example, Davis states: “The curriculum is the course of study.” This has, in fact, been quite a generally accepted concept. When the curriculum is looked upon as being composed of the actual experiences children have under the direction of teachers, it obviously is impossible to consider it as synonymous with the course of study. In this case, the course of study becomes a printed guide which has been prepared to assist teacher to direct satisfactorily the development of the curriculum.

“The curriculum,” it is stated, “may be defined as the totality of subject matter, activities, and experiences which constitute a pupil’s school life.

3.2.0 Curriculum Reconstruction in India:

The first major attempt in curriculum reconstruction in India was made in 1937, when Gandhiji propounded the idea of basic education and Dr. Zakir Husain committee elaborated the scheme of studies of Basic education. However, much work in this direction could not be done as India was under the foreign rule. Secondary school curriculum on the eve
of Independence was indifferent to differential psychology and prescribed the same course with practically no variety, for all. It was over-crowded and yet lacking in rich and significant content, when India became Independent on 15th August 1947, a new page was turned in the history of Secondary Education. The next step in curriculum reconstruction of secondary education was taken with the appointment of the secondary education commission 1952-53.

**Curriculum development process of secondary schools in India: Role of NCERT**

According to an international comparative study of school curriculum, National Institute for Educational Research, 1999, the National Council of Educational Research and Training, NCERT is the national apex research institution which was set up in 1961 as an autonomous body under the Government of India. Its mandate is to assist and advice the Government of India in the formulation and implementation of policies and programmes in the field of school education. At the state level each state has State Council of Educational Research and Training (SCERT) which is a counterpart of the NCERT. The decisions regarding curriculum design are essentially done by professional bodies such as NCERT and SCERT.

The NCERT came out with a broad nationwide curriculum framework for the first time in 1975. National Curriculum for the ten year schools – A framework (1975) was the first attempt of its kind.

Second curriculum framework was brought out in 1988. It was - National Curriculum for Elementary and Secondary Education – 1988.
The third curriculum framework was brought out in the year 2000. It was:

A comparative profile of the three generations of curriculum frameworks is given at the end of this chapter.

3.2.1 Secondary School Science, Social Studies and Use of IT:

Science and Social Studies form one of the crucial curricular areas. Their curricula should help in fulfilling the needs of the individuals and society and should keep pace with the changing times. It should be integrated with Information Technology. The use of computers is expanding extremely rapidly. IT is an interesting teacher. It is a powerful tool. It can make learning easier and more attractive for example; a resource for learning about animals could include written information about their habitat, and pictures of it. There could be video clips showing the animal running, accompanied by animal diagrams of the operation of their skeletal structure and muscles. This could be done using multimedia software.

CURRICULUM MODELS OF IT:

In practice, three basic models of the IT curriculum have emerged. These are:

- the subject IT Approach;
- the cross-curricular IT approach;
- the hybrid IT approach.

Subject IT:
This is the traditional approach. It is also referred to as the 'contralised' approach. IT can be taught as a separate subject; time can be allocated on the timetable for IT in the same way as it is allocated for Mathematics, Science, Social Studies, English and the other National Curriculum subjects. It is assumed that pupils will be taught IT, make use of IT, and be assessed in IT mainly in the timetabled subject of IT.

**Cross-Curriculum IT:**

In the cross-curricular approach, IT is taught and used only in the other NC subjects. There is no time allocated on the timetable specifically for IT as it is assumed that the teaching, use and assessment of IT will all take place in some, or all, of the other NC subjects. The cross-curricular model can be organized in a variety of ways for example, by mapping, the sub-themes of IT to several other NC subjects. The sub-themes represent coherent groupings of the subject content.

**Hybrid IT:**

There can be a variety of hybrid models used in practice. The extension of the cross-curricular model described in the previous paragraph is one such variant. Another can be 'a central core of IT running through each year and aimed at developing skills which can then be used across the curriculum. This approach attempts to combine the advantages of both the subject IT and cross-curricular IT models. In the 'ideal' hybrid model, pupils are taught and assessed by IT specialists in IT subject classes, and use IT across the curriculum wherever possible. A course in IT, taught by a specialist teacher, could prepare pupils for assessment in the IT short course, and for using IT in other NC subjects.
Such a course could occupy 5 percent of timetabled time. Pupils can be assessed by the IT specialist who teaches them. Pupils’ use of IT across the curriculum will still need to be planned and recorded. However, teachers of other NC subjects will not need to teach and assess IT skills as this will be done in IT subject studies; these teachers can give due priority to their own subjects, making use of IT when appropriate.

On the whole, the hybrid model is acknowledged to be the most practical approach for schools.

**The ‘IT across the Curriculum’ Game:**

Roger Crawf in his book, Managing IT in secondary schools has explained that IT across the curriculum game helps participate to develop an understanding of the cross-curricular nature of IT and to appreciate its uses in all subjects of the curriculum. The curriculum Board (Fig. 1) is a grid with years 9 to 12 across the top and most of the NC subjects down the side.

It is a good framework for planning the IT curriculum.

The resources needed to play the game are:

- the Curriculum Board (see Figure 1).
- the Activity Cards (see Figure 2).
- the NC Programmes of study for IT.
- relevant external assessment syllabi for IT.

The rules of the game are:

1. The game is played in groups of five players.
2. Deal out the Activity cards equally, discarding the remainder.
3. Starting at the dealer's left, in turn, each player places an Activity card on the Curriculum Board.

4. When an Activity card has been placed by a player, the group decides whether it has been placed in an appropriate cell on the Curriculum Board.

5. If the Activity card has not been placed in an appropriate cell on the Curriculum Board, the Activity card is returned to the player who placed it. Otherwise, the Activity card remains on the Curriculum Board and the game moves on to the next player.

6. If an Activity card is placed on an IT cell, the player misses a turn.

7. If an Activity card is placed on a cell that already has an Activity card on it, the player misses a turn.

8. The winner is the player to discard all their Activity cards first.

Table 3.1: TRAINING ACTIVITIES

<table>
<thead>
<tr>
<th>Year 9</th>
<th>Year 10</th>
<th>Year 11</th>
<th>Year 12</th>
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<td>English</td>
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<td>Social Studies</td>
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<td>Modern Languages</td>
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<td>PE</td>
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<td></td>
<td></td>
<td></td>
<td>Other</td>
</tr>
</tbody>
</table>
## TRAINING ACTIVITIES

Table 3.2: Activity cards for the ‘IT across the curriculum’ game.

<table>
<thead>
<tr>
<th>Set up a database of the names and addresses of pupils in their class.</th>
<th>Use a word processor to write a letter to a friend.</th>
<th>Control a turtle using a simple control language.</th>
<th>Describe how hospitals and GPs use IT to handle medical records.</th>
<th>Use a spreadsheet to work out percentage discounts on a range of goods.</th>
<th>Use search conditions with AND, OR and NOT operators to search a database.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measure and record the temperature every hour for one month.</td>
<td>Format a floppy disk</td>
<td>Send personalized letters to sponsors of the football team.</td>
<td>Use different fonts, sizes and styles of text.</td>
<td>Use clip art to illustrate an advert for a sports shop.</td>
<td>Describe the function of a supermarket stock control system that uses bar codes.</td>
</tr>
<tr>
<td>Model the growth of bacteria using a spreadsheet.</td>
<td>Delete a file on a floppy disk</td>
<td>Use a spelling checker to help eliminate spelling mistakes.</td>
<td>Scan a photograph of themselves and include it in their c.v.</td>
<td>Discuss problems associated with the storing of personal data on a computer.</td>
<td>Guide a Valiant turtle around an obstacle.</td>
</tr>
<tr>
<td>Analyse survey data from questionnaires using a database.</td>
<td>Draft and edit an article for the school newspaper using a word-processor.</td>
<td>Set up a spreadsheet to work out the cost of making a bicycle.</td>
<td>Explain how feedback is used in a computer-controlled central heating system.</td>
<td>Generate pie diagrams, bar charts and line graphs using a spreadsheet.</td>
<td>Describe how to use an ATM or a cashpoint.</td>
</tr>
<tr>
<td>Explain how an automatic door works.</td>
<td>Extract a list of books on horses from a library database.</td>
<td>Discuss the social, economic, ethical and moral issues related to software piracy.</td>
<td>Copy a file onto a floppy disk from another floppy disk or a hard disk.</td>
<td>Design a questionnaire so that it is easy to input the data collected into a computer.</td>
<td>Use a database to sort a list of names into alphabetical order.</td>
</tr>
<tr>
<td>Write a logo procedure to draw a square</td>
<td>Describe how a robot can be made to</td>
<td>Design a questionnaire about</td>
<td>Draw a wallpaper design with a</td>
<td>Using IT, compose a piece of music and</td>
<td>Use a simple control language to</td>
</tr>
<tr>
<td>Activity</td>
<td>Action</td>
<td>Task</td>
<td>Subtask</td>
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<tr>
<td>on the screen.</td>
<td>follow a dark line on the floor.</td>
<td>people's attitudes to a new supermarket.</td>
<td>repeated pattern.</td>
<td>print the score.</td>
<td>operate a computer-controlled robotic arm.</td>
</tr>
<tr>
<td>Using IT, modify a recorded piece of music so that it is played on different 'instruments'.</td>
<td>Design a company logo, business card and headed note paper.</td>
<td>Get information from a database and import it into a word-processed essay.</td>
<td>Use teletext, e.g. Ceefax, and explain how it is transmitted and accessed.</td>
<td>Draw a picture and print it.</td>
<td>Recognise that poor quality data may give inaccurate results.</td>
</tr>
<tr>
<td>Explain the advantages and disadvantages of electronic mail.</td>
<td>Write an article about a puppet show, and design tickets and posters advertising it.</td>
<td>Use IT to keep a record of the books they have read and their opinions of them.</td>
<td>Recognise blocks of text to improve the sense of a report about the youth club.</td>
<td>Write an illustrated book to help young children learn to read.</td>
<td>Record a piece of music and play it through a synthesizer at a concert.</td>
</tr>
<tr>
<td>Compare the use of a card index file with the use of a database.</td>
<td>Scan part of a magazine article and include it in a word-processed essay.</td>
<td>Save a file on a floppy disk and load it at a later data.</td>
<td>Set up a printer so that it is ready to be used.</td>
<td>Investigate how height is related to strength and speed.</td>
<td>Extract a list of books on cars by authors beginning with 'H' from a library catalogue.</td>
</tr>
<tr>
<td>Analyse census data and parish records on a database.</td>
<td>Layout a page of text and graphics for the school newspaper using DTP software.</td>
<td>Set up a view data system giving information about the day’s events.</td>
<td>Scan a picture and modify it using graphics software.</td>
<td>Explore how to control inflation using a computer-based model of the economy.</td>
<td>Manage a petrol refinery using a computer-based simulation.</td>
</tr>
</tbody>
</table>
The Ministry of Education, Government of India in Dec. 1983 constituted a committee to “consider the desirability and feasibility of Introduction of Computer Science as an Elective Subject at the +2 level under the 10+2 system of education.

“Minimum vocational competencies based curriculum” computer technique was developed in a workshop organized by NCERT at Bhopal in December, 1983. The committee accepted the following courses for students and teachers.

(i) Computer Studies: Course A (Basic & Fortran).
(ii) Computer Studies: Course A (Basic & Cobol).
(iii) Computer Science: Academic Elective.

The NCERT also published a book entitled “Computer Literacy” in 1996.

A new department of Computer Education and Technological Aids (DCETA) was set up under the NIE during 1995-96.

During the year 2001, NCERT had published three volumes of instructional materials for students, titled Learning with computers (Level I, II and III). Prototype versions of a no. of multimedia learning programs for students were put up on NCERT’s website.

Recently on 4th September, 2006 under the programme Sarv Shiksha Abhiyan, Govt. of N.C.T. of Delhi, Directorate of Education launched CALtoonZ 2006, an initiative which teaches the curriculum and the textbooks in the classroom through computer aided learning.
3.3.0 Commissions, Committees and Policies for the Secondary School Curriculum from 1947 to 2003 with special reference to Science and Social Science:

In order to enrich Secondary School Curriculum various commissions, committees and policies were appointed from time to time by the Government of India. They are as follows:

3.3.1 Secondary Education Commission (1952-53):

A number of commissions had been appointed before Independence and just after Independences to survey the Indian Education. The Government of India, appointed the Secondary Education Commission. Dr. A. Lakshmanaswami Mudaliar Vice-Chancellor, Madras University, Madras was its Chairman.

Secondary Education Commission recommended the following new organizational structure for secondary education after the 4 or 5 years of Primary or Junior Basic Education.

(i) A Middle or Junior Secondary or Senior Basic stage which should cover a period of 3 years;

(ii) A Higher Secondary stage which should cover a period of four years.

> In the first place, “according to the best modern educational thought; curriculum does not mean only the academic subjects traditionally taught in the school but it includes the totality of experiences that a pupil receives through the manifold activities that go on in the whole life of the school.
Secondly, there should be enough variety and elasticity in the curriculum to allow for individual differences and adaptation to individual needs and interests.

Thirdly, the curriculum must be vitally and organically related to community life.

Fourthly, the curriculum should be designated to train the students not only for work but also for leisure.

Fifthly, subjects should be inter-related and, within each subject, the contents should so far as possible be envisaged as “broad-fields” units which can be correlated better with life rather than narrow items of information.

The curriculum at the Secondary and Higher Secondary School Stage as recommended by Secondary education commission:

A.(i) Mother tongue or Regional language or a composite course of the mother tongue and a classical language.

(ii) One other language to be chosen from among the following:

(a) Hindi (for those whose mother tongue is not Hindi).
(b) Elementary English (for those who have not studied it in the middle stage).
(c) Advanced English (for those who had studied English in the earlier stage).
(d) A modern Indian language (other than Hindi).
(e) A modern foreign language (other than English).
(f) A classical language.

B. (i) Social studies – general course (for the first two years only).
(ii) General Science including Mathematics – general course (for the first two years only).

C. One craft to be chosen from the following list (which may be added to according to local needs):
(a) Spinning and weaving; (b) Wood-work; (c) Metalwork; (d) Gardening (e) Tailoring; (f) Typography; (g) Workshop practice; (h) Sewing, Needlework and Embroidery; (i) Modelling.

D. Three subjects from one of the following groups:

**Group 1 (Humanities)**
(a) A classical language or a third language from A (ii) not already taken; (b) History; (c) geography; (d) Elements of Economics and Civics; (e) Elements of Psychology and Logic; (f) Mathematics; (g) Music (h) Domestic Science.

**Group 2 (Sciences)**
(a) Physics; (b) Chemistry; (c) Biology; (d) Geography; (e) Mathematics; (f) Elements of Psychology and Hygiene (not to be taken with Biology).

**Group 3 (Technical)**
(a) Applied Mathematics and Geometrical Engineering; (b) Applied Sciences; (c) Elements of Mechanical Engineering; (d) Elements of Electrical Engineering.

**Group 4 (Commercial)**
(a) Commercial Practice; (b) Book-Keeping; (c) Commercial Geography or Elements of Economics and Civics; (d) Shorthand and Typewriting.

**Group 5 (Agriculture)**
(a) General Agriculture; (b) Animal Husbandry; (c) Horticulture and Gardening; (d) Agricultural Chemistry and Botany.
Group 6 (Fine Arts)
(a) History of Art; (b) Drawing and Designing; (c) Painting; (d) Modelling; (e) Music; (f) Dancing.

Group 7 (Home Science)
(a) Home Economics; (b) Nutrition and Cookery; (c) Mother Craft and Child Care; (d) Household Management and Home Nursing.

E. Besides the above a student may take at his option one additional subject from any of the above groups irrespective of whether or not he has chosen his other options from that particular group.

These seven groups of optional courses were recommended by the Secondary Education Commission. However, the State Departments of Education were free to examine the position in the light of their experiences and modify or add to these groups.

3.3.2 Committee on Rural Education (1957):

During 1957-58 under the scheme for the introduction of Agriculture and Science courses in rural secondary schools, eighty agricultural and science courses were started in rural secondary schools during the year. The committee appointed in 1957, by the Ministry of Education, under the Chairmanship of Shri B. Mukherjee went into the various problems of rural education.

3.3.3 Integration of Post-Basic and Multipurpose Schools (1957):

The standing committee of the Central Advisory Board of Education on basic education in their sixth meeting held in August, 1957, felt that the multilateral schools and post-basic schools should not be regarded as two parallel systems but each should be regarded as an integral part of the other. The Education Secretary was, therefore,
requested to set up a small committee of experts from the Ministry of Education and the local education units for understanding a comparative study of the syllabi of the multilateral and the existing post-basic schools and finding out common points which would help in bringing the two types nearer to each other.

3.3.4 Indian Parliamentary and Scientific Committee (1961-64):

The Indian Parliamentary and Scientific Committee was formed in August 1961 with Shri Lal Bahadur Shastri as its Chairman. Its primary objective was to study and examine the problem of 'Science Education in Schools'. In 1962 it formed a study group with Shri H.C. Dasappa, M.P. as Chairman. The committee had several meetings and Members of Parliament of both the Houses took keen interest in its deliberations.

Its objectives were:

(a) To study and examine early in 1962 the problem of Science Education in schools, and

(b) To find out the position of how science courses were organized in primary, middle and high/higher secondary schools in relation to policies and decisions arrived at the center and the states when the third plan commenced.

Major recommendations regarding textbooks

In textbooks dealing with languages and social studies adequate attention should be paid to the needs, experiences and problems of girls by including such topics as special festivals of women, games popular with girls, lives of great women etc.

Promotion of Science Education: During 1965, on the recommendation of the Education Minister's conference on the reconstruction of
Secondary Education, the CABE accepted that at the secondary stage, increased provision should be made for the study of elective science courses and teaching of general science as a compulsory subject for those who do not offer elective science.

3.3.5 Committee on Differentiation of Curricula for Boys and Girls (1961-64):

The National Council for Women’s Education, in its meeting held in 1961, authorized its Chairman to set up a committee to examine comprehensively the problem of curricula for girls at all stages of education.

Major Recommendations

Proposals for differentiation of curricula: In the ultimate democratic and socialistic pattern of society, education will be related to individual capacities, aptitudes and interests which are not related to sex. There would, therefore, be no need in such a society to differentiate curricula on the basis of sex. But certain psychological differences between men and women formed the basis for building up the curricula for boys and girls.

Secondary Stage:

(a) The accepted policy at the secondary stage is to provide diversified curricula to meet the aptitudes and capacities of all adolescents. If properly implemented, this programme could provide for all the special needs of girls. Diversified courses such as those for home science, fine arts, music, etc. should be increasingly introduced at the secondary stage to meet the special needs of girls. These electives should not, however be made compulsory for them.
(b) Special encouragement should be given to girls who study mathematics or science at the secondary stage, and special efforts should be made to prepare women teachers of mathematics and science.

3.3.6 Panel on Science Education in Secondary Schools (1964):

A panel was set up in May 1964 in pursuance of a meeting held by the Planning Commission under the Chairmanship of Prof. M.S. Thacker, Member, Planning Commission. The panel was broad-based and composite representing State Governments, Education Boards, Ministry of Education, Council of Scientific and Industrial Research, National Buildings Organization, Indian Standards Institute and Independent Scientists. The panel examined the procedure for the allotment of funds and procurement of equipment in secondary schools and thereafter drew standard lists of equipment for science laboratories of secondary schools and suggested grants for the purpose.

Chairman of the Panel was Dr. K.N. Mathur, Scientist Emeritus, Council of Scientific and Industrial Research, New Delhi with 19 other members in it.

Its Recommendations:

- The lists of equipment for physics, chemistry and biology laboratories of high schools be prepared on the basis of the syllabi of Maharashtra and U.P. Boards and indicate generally the minimum equipment that a high school should have. Necessary modifications may be made to suit requirements of syllabus of the Board concerned.
- The essential items of apparatus, as mentioned in the lists of equipment and apparatus, should be supplied immediately when science is introduced in class IX. The desirable items of equipment may be supplied in installments during the subsequent two or three years.

- Boards of Secondary Education should introduce a system of evaluation of students practical laboratory work.

- Students should be encouraged to make simple scientific instruments themselves, since it will give them a practical bias to learn science at the secondary school stage.

- Creation of a separate branch of Science Education in each State Department of Education for improvement of science teaching.

3.3.7 Committee on Girls' Education (1963-64):

The Chairman of the National Council for Women's Education accordingly appointed in May 1963, a committee with Shri M. Bhaktavatsalam, Chief Minister, Madras. Eight others members were also there in the committee.

The committee recommended that at the secondary stage the central assistance should be provided for separate schools for girls, (ii) hostels, (iii) Grant of free books, writing materials and clothing to girls; and (iv) preparation and appointment of women teachers in increasing numbers.

3.3.8 Committee on School Textbooks (1966):

The Government of India, Ministry of Education, set up a committee in 1966 under the Chairmanship of Prof. K.G. Saiyidain, Director of the Asian Institute of Educational Planning and
Administration, New Delhi to advise the Government of India on the principles to be adopted in the preparation and assessment of textbooks suitable for a secular state. The committee held eight meetings in the course of work. In addition to discussing the various aspects of the problem and critically examining some of the textbooks of Uttar Pradesh and Madhya Pradesh, the members of the committee interviewed representatives of minority communities, representatives of the Education Departments of Uttar Pradesh and Rajasthan and a few eminent educationists including the then Vice-President, Dr. Zakir Hussain.

The terms of reference of the committee were as follows:

(a) To examine the specific complaints regarding books brought to the notice of the committee from different states and to test their validity with particular reference to the need for promoting inter-communal and inter-regional understanding;

(b) To state the general principles to be adopted in the preparation and assessment of textbooks with special reference to the teaching of languages, history and social studies; and

(c) To suggest a practical programme of action for the preparation and assessment of textbooks prepared on the basis of principles so enunciated.

**Recommendations:**

**Teaching of History:** One of the most sensitive areas demanding delicate handing lies in the preparation of textbooks for history in the schools. The discipline of the subject requires objectivity and precision and dispassionate study of facts. It would be unwise not to state facts with accuracy and objectivity in history readers, as there can be no
compromise with truth. This is an important element in the education of
the young. There is, however, an element of interpretation in the
treatment of historical data and it is essential to ensure that history is
interpreted in a manner which will assist in the cultivation of
understanding and in promoting the sense of national integration. It will
do no good if historical facts or incidents are either mis-stated or ignored
in schools. Those among the students who may later become scholars of
history will feel resentment when they discover later that they were
willfully fed on lies. The great challenge in the preparation of good
history readers lies in the wise and careful selectivity of material. Greatest
care and caution must be exercised by knowledgeable writers in including
material which will neither entail sacrifice of truth nor of the elements
required for the building up of a peaceful, tolerant minded and united
nation.

3.3.9 Education Commission, 1964-66 (Kothari Commission):

The unique feature of this commission was not to limit its inquiry
to any specific sector or aspect of education as the earlier commissions
had done but to have a comprehensive review of the entire educational
system. The commission set up 12 task forces and 7 working groups.

Extracts from the Report were:

Science as a Basic Component of Education and Culture:

Science education must become an integral part of school
education; and ultimately some study of science should become a part of
all courses in the humanities and social sciences at the secondary and
university stage, even as the teaching of sciences can be enriched by the
inclusion of some elements of humanities and social sciences.
Vocationalization of Secondary Education:

Another programme which can bring education into closer relationship with productivity is to give a strong vocational bias to secondary education, and to increase the emphasis on agricultural and technological education at the secondary school stage.

1. Science Education must become an integral part of school education

2. Specialization in classes XI and XII

   Classes XI and XII (and during the transitional period class XI only) should provide for specialized studies in different subjects at the higher secondary stage.

3. Two years duration of Higher Secondary Stage.

   The higher secondary stage should be extended to cover a period of two years and to be located exclusively in schools.

4. Instructional days in schools

   The number of instructional days in a year should be increased to about 234 (or 39 weeks) for schools and 216 (or 36 weeks) for colleges.

5. Holidays to be Minimized. There is no need to close an educational institution on a religious holiday. Nor is it necessary for instance to close it on birthdays or death anniversaries of great Indians; the time could be better utilized in working hard for national development.

6. Working Days. In an academic year, the hours of instruction at the secondary stages should not be less than 1,000 and preferably raised to 1100 or even 1200 if conditions are favourable.

7. Maximum utilization of School Facilities:
The libraries, laboratories, workshops, craftsheds, etc., should be open all the year round and should be utilized for at least eight hours a day.

8. Two sets of curricula. The State Boards of school education should prepare two sets of curricula – advanced and ordinary. Every school need not adopt the advance curricula in all the subjects.

9. Three of Four Textbooks for each subject: No useful purpose is served by having only one textbook in a subject for a given class. It should be an important objective of policy to have at least three or four books in each subject for each class and leave it open to the teacher to choose the book best suited to the school. This was necessary even if there were to be common syllabus for all schools.

**Enrichment of the curricula and improvement of quality:**

An equally important aspect was qualitative improvement so that the instruction imparted became good education and helps children to grow into useful and responsible citizens. The teaching of science had to be vitalized, the entire curriculum had to be overhauled and improved, and modern methods of teaching and evaluation were adopted.

**School Curriculum:**

**Standards of Attainment at Secondary Stage:**

The standards should be defined in terms of the knowledge, skills, abilities and attitudes to be developed with reference to the overall objectives of school education.

**Lower Secondary Stage (Classes IX – X)**

(a) Three Languages

(b) Mathematics
(c) Science
(d) History, Geography and Civics
(e) Art
(f) Work Experience and Social Service
(g) Physical Education
(h) Education in Moral and Spiritual Values

**Higher Secondary Stage (Classes XI – XII)**

(1) Any two languages, including any modern Indian language, any modern foreign language and any classical language.

(2) Any three subjects from (a) An Additional Language (b) History (c) Geography (d) Economics (e) Logic (f) Psychology (g) Sociology (h) Art (i) Physics (j) Chemistry (k) Mathematics (l) Biology (m) Geology (n) Home Science.

(3) Work-Experience and Social Service

(4) Physical Education

(5) Art or Craft

(6) Education in Moral and Spiritual Values

**Advancement and Enrichment Programmes at Secondary Stage:**

At the secondary stage, diversified courses are not favourable. There should be organization of courses at two levels – ordinary and advanced – beginning with class VIII. Advanced courses may be offered in various subjects and should be included in the curriculum on an optional basis.

**3.4.0 National Policy on Education (1968):**

The Education Commission 1964-66 recommended that the Government of India issued a statement on the National Policy on
Education which provided guidance to the State Governments and the local authorities in preparing and implementing educational plans. In 1967 the Government of India constituted a committee of Members of Parliament on Education to prepare the draft of a statement on the National Policy of Education.

Some relevant extracts from the policy are as under:

1. **Science Education**

   With a view to accelerating the growth of the national economy, science education should receive high priority. It should be an integral part of general education, till the end of the school stage.

2. **Production of Books**

   (i) The quality of books should be improved by attracting the best writing talent through a liberal policy of incentives and remuneration.

   (ii) Frequent changes of textbooks should be avoided and their prices should be low enough for students of ordinary means to buy them.

3.4.1 **National Committee on 10+2+3 Educational Structure (1973):**

   On the recommendations of the Education Commission 1964-66, the 10+2+3 structure was incorporated in the statement of the National Policy on Education, 1968. It was thought that a new programme of curriculum development should be undertaken by the adoption of a broadly uniform pattern popularly known as 10+2+3 pattern, throughout the country. The structure was discussed and endorsed by a number of All India Forums on education including the Central Advisory Board of Education.
Major Recommendations were as follows:

Curriculum Reconstruction: The new educational structure does not envisage mere addition of one year to the total period of education or taking away of one class from the collegiate stage to school education or vice-versa. The curriculum should also be in accordance with the current needs of the society, allow mobility of children from one state or territory to another, and help national integration.

Secondary Stage Curriculum:

The new classes IX and X should provide for a good course of general education. This is too early a stage for any specialization. The curriculum, therefore, should include, compulsory teaching of the following:

1. Teaching of Language(s)
2. Modern Mathematics
3. Sciences
4. Social Sciences
5. Moral Education
6. Physical Education
7. Craft or Trade

The curriculum should in addition, provide for one optional subject out of the usual academic and practical subjects relevant to this stage of education.

Higher Secondary Stage (Classes XI & XII):

The curriculum of the new classes XI and XII should be built on the latest curriculum for the new classes. IX and X should provide for two streams, i.e.,
(i) Academic Stream, and
(ii) Vocational Stream

**Location of the New Classes XI and XII:**

It was desirable that on academic and pedagogic considerations, the new classes XI and XII should form part of the school system and should, as far as possible, be located in selected schools.

**3.5.0 Expert Group on Curriculum for the Ten-Year School: A Framework (1975):**

The school curriculum of a country, like its constitution, reflects the ethos of that country as also its chief concerns. With a view to formulating a meaningful curriculum, the Ministry of Education and Social Welfare constituted an expert group in 1973 to develop the curriculum for the 10+2 pattern. A national conference was also held in August 1975 on the subject which was attended by about 200 educationists from all over the country. The document includes subject-wise instructional objectives and methodology of teaching.

A curriculum may be regarded as the sum total of all deliberately planned set of educational experiences provided to the child by the school. As such it is concerned with.

(i) The general objectives of education at a particular stage or class.
(ii) The subject-wise instructional objectives and content.
(iii) Courses of study and allocation
(iv) Teaching-learning experiences
(v) Instructional aids and materials
(vi) Evaluation of learning outcomes and feedback to pupils, teachers and parents.
Objectives for the Secondary School Stage:

As suggested by the expert group on curriculum for the ten year school. Lower secondary schools should work for six days in the week. Assuming that there should be 48 periods per week, each of 30-40 minutes duration, the instructional periods may be distributed as given below. However, schools might make suitable modifications, wherever necessary, since what is indicated here is notional.

Table 3.3: Instructional periods

<table>
<thead>
<tr>
<th>Classes</th>
<th>Subject</th>
<th>Periods per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>IX-X</td>
<td>First Language</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Secondary Language</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Mathematics</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Sciences (life sciences and physical sciences)</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Social studies (history, geography, civics &amp; economics)</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Arts</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Work experience</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Physical education, health education and games</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>48</strong></td>
</tr>
</tbody>
</table>

3.5.1 Curriculum Committee on Higher Secondary Education and Its Vocationalization (1976)

The introduction of the new pattern of education 10+2 envisaged the vocationalization of higher secondary education at an extensive scale. Accordingly NCERT prepared a document and spelled out details of
implementing the scheme. The Curriculum Committee included 54 experts in the field.

**Diversification and Flexibility:**

The characteristic feature of the last two years of schooling (called the higher secondary) is diversification, the aim of which is to avoid forcing students into the academic channel alone and to offer them opportunities to choose subjects and programmes to study in a much wider field of education. A necessary feature of the higher secondary education would, therefore, be the provision of a large number of vocational streams which would generally be terminal. The system itself would, however, be so designed that a student may be allowed to transfer from the academic to the vocational stream, and vice versa without having to start in the other stream from the very beginning; there will also be provision for pursuing some of the study through part-time and correspondence courses.

Vocationalization of higher secondary education cannot be equated with mere technician training, it is essentially education in the broader sense of the term. It prepares and cultivates the individual to understand the social reality.

**3.5.2 Review Committee (Ishwarbhai Patel Committee) on the Curriculum for the Ten-Year School (1977)**

The New Pattern of Education 10+2 had been introduced in several schools in the country. The National Council of Educational Research and Training had prepared a new curriculum and textbooks which came under heavy criticism due to various reasons. In the meanwhile there was a change of government at the centre and the Janata Government with
Shri Morarji Desai came to power in 1977. It became natural for the Ministry of Education to review the educational policies of the earlier government. Thus a Review Committee popularly known as Ishwarbhai Patel Committee was appointed by the Union Minister of Education and Social Welfare, in his capacity as President of the NCERT. The Review Committee headed by Shri Ishwarbhai J. Patel (Vice-Chancellor, Gujarat University) had 30 members.

**The Review Committee aimed:**

1. To review the stage wise and subject wise objectives identified in the NCERT document. 'The Curriculum for the Ten-Year School'.

2. To scrutinize the NCERT syllabus and textbooks, in the light of the review as per (1) above.

3. To scrutinize the scheme of studies, as given in the said document, and examine whether any suitable modifications in either the scheme of studies or the time-table or both should not be made and to propose suitable staffing pattern.

4. To review the present scheme of studies and the time allocated for various subjects with a view to ensuring that:
   
   (i) the teacher has adequate time for experimentation, creative work, remedial instruction, etc.
   
   (ii) to accommodate the needs of the bright child for advanced level courses, the specific interests and aptitude, or the lack of it, in children, in only certain subject areas, keeping in view the national goals of development and objectives of education.
Table 3.4 Structure Curriculum Pattern and Time Allocation

<table>
<thead>
<tr>
<th>Classes IX-X</th>
<th>Time allocation (per week)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Languages</td>
<td>8 hours</td>
</tr>
<tr>
<td>2. Mathematics: Alternative I or Alternative II</td>
<td>4 hours</td>
</tr>
<tr>
<td>3. Science (Theory and Practical): Alternative I or Alternative II</td>
<td>5 hours</td>
</tr>
<tr>
<td>4. History, Civics and Geography – as one course</td>
<td>3 hours</td>
</tr>
<tr>
<td>5. One of the following: The Arts (Music, Dancing, Painting etc.), Home Science, Agriculture, Commerce, Economics, Social Reconstruction, Classical Languages etc.</td>
<td>2 hours</td>
</tr>
<tr>
<td>6. Socially Useful Productive Work and Community Service</td>
<td>6 hours</td>
</tr>
<tr>
<td>7. Games, Physical Education and Supervised Study</td>
<td>4 hours</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>32 hours</strong></td>
</tr>
</tbody>
</table>

3.5.3 National Review Committee on Higher Secondary Education (1978)

The terms of reference of the National Review Committee for the +2 curriculum were as follows:

(i) To review the NCERT’s document “Higher Secondary Education and its vocationalization” and to suggest modifications therein, if any.

(ii) To study the syllabi and courses of the CBSE and a few State Boards with special reference to a few selected vocations and to recommend appropriate syllabi.

(iii) To recommend a plan of action for introduction of vocationalization of the Secondary/Higher Secondary stage.

Curriculum and textbooks:

The curricula should be so structured that the courses lend themselves to imparting instruction in terms of well connected modules to enable the students to choose and combine them according to their needs.

In order to impart instruction in vocational courses, in agriculture and related subjects, it was recommended that the books be written on a priority basis to suit total condition and made available to the schools.

3.5.4 Working Group on Autonomous Schools (1981):

The Report of the Education Commission 1964-66 had said the schools should not only be freed from the requirements of an external examination but should be permitted to frame their own curricula, prescribe their own textbooks and conduct their educational activities without departmental restrictions...

Fr. T.V. Kunnunkal (then) Vice-Chairman, CBSE (Convener) and eight other members formed the Members of the working group.
3.6.0 National Curriculum for Primary and Secondary Education: A Framework (1985):

The curriculum framework may broadly be interpreted as a framework for institutional reform in the field of education. It was considered as a guide to facilitate the process of curriculum change with a thrust on institutional reform. It continued to guide till the publication of the revised version of ‘National Curriculum for Elementary and Secondary Educations A Framework, 1988’. The curriculum was prepared by the NCERT after conducting several meetings and seminars. Representatives of the State/Union Territory Governments participated in the deliberations of the meetings. The document covered four areas – Emerging concerns and imperatives, Curriculum organizations, Evaluation and Implementation.

3.6.1 National Policy on Education (1986):

The document ‘Challenge of Education’ (1985) was debated in the country at various conferences, seminars and study circles etc. It is of great interest to note that the document was translated practically into all the regional languages. 5,80,000 copies of this document in English, 2,40,000 in Hindi and 4,000 in Urdu were distributed by the Ministry, inviting suggestions and comments from all sections of the people. As a part of the nation-wide debate for the formulation of the new policy on education, 12 National Seminars and 17 sponsored seminars were organized by the Ministry of Education and its national organizations. All State Governments and Union Territories also organized seminars, workshops and symposia. A detailed analysis was made of all the communications and recommendations received in the Ministry.
Thereafter, the Ministry of Human Resource Development brought out a revised document ‘National Policy on Education 1986 – A Presentation’. This paper was discussed at the meetings of the State Ministers of Education, the National Development Council and the Central Advisory Board of Education. It was revised in the light of these discussions and the ‘Draft National Policy on Education 1986’ was finally laid on the table of Parliament in the first week of May, 1986.

The National Policy on Education was adopted by the Lok Sabha on May 8, 1986 and the Rajya Sabha on May 13, 1986. A promise was made at that time by the Minister of Human Resource Development that he would present in the Monsoon session a programme of Action for the implementation of the Policy.

Content and Process of School Education

The Policy and its Implications:

2. The parameters related to the reorientation of the content and process of education, as indicated in the NPE are:

(i) access to education of a comparable quality for all irrespective of caste, creed, location or sex.

(iii) Articulation of a national system of education with a common structure, national curricular framework which contains a common core.

(ix) effective use of modern communication technology for generation and dissemination of educational programmes, training, packages, and for creating awareness.
Intervention Programmes:

3. The intervention programmes broadly covered orientation in curricular areas, inservice teacher training, support systems, use of technology for motivation and monitoring.

The modes of intervention and the corresponding programmes as deduced from the policy are as follows:

(a) Content Reorientation:

(1) National core Curriculum
(2) Revised Work Experience Programmes
(3) National Curriculum Framework, Syllabi and Instructional Packages.

3.6.2 Programme of Action, 1986

After the declaration of the National Policy on Education, 1986, the Ministry of Human Resource Development, formerly known as Ministry of Education, Government of India, announced the programme of Action for its implementation. This was the first time in the history of educational development in independent India that such a follow up programme was prepared. Twenty-three Task Forces were prepared and each was assigned a specific topic covered by the National Policy on Education, 1986 (NPE). Eminent educationists, experts, senior bureaucrats and representatives of the Central and State Governments were associated with these Task Forces.

The document on programmes of Action was discussed in the meeting of the Central Advisory Board of Education held at New Delhi on the 1st and 2nd of August 1986. The Final Programme of Action was presented to Parliament on August 8, 1986. The Lok Sabha and the Rajya
Sabha discussed and approved the Programme of Action on 22 and 23 August 1986 respectively. It contains twenty-four well intentioned excellent essays on various aspects of education. There are five paragraphs on Secondary Education and Navodaya Vidyalayas and 9 paragraphs on Media and Educational Technology (including use of Computers in Education).

3.7.0 National Curriculum for Elementary and Secondary Education (1988):

The national curriculum has been prepared by NCERT in the light of the major thrusts and recommendations highlighted in the National Policy on Education. It was the outcome of a national seminar and four regional seminars. These seminars were attended by the representatives of all the State Boards of School Education / Secondary Education, the Central Board of Secondary Education (CBSE) and the Kendriya Vidyalaya Sangathan (KVS) also participated in the seminars and meetings.

The document contains four chapters as under:

1. Emerging Concerns and Imperatives
2. Organization of Curriculum
3. Evaluation and Examination Reform
4. Implementation

Curricular Concerns

The document lists the following curricular concerns.

1. Socio-cultural, Political and Economic considerations:
   (a) Equality of Education and Opportunity
   (b) Preservation of Cultural Heritage
3.8.0 Ramamurti Review Committee (1990):

The short-lived Janata Government headed by Shri V.P. Singh, Prime Minister of India, appointed a committee on May 7, 1990 to review the National Policy on Education, 1986, formulated by the Congress government under Shri Rajiv Gandhi. The Committee for Review is popularly known as Ramamurti Review Committee after the name Acharya Ramamurti who was the Chairman of the Committee. The committee submitted its report to the Minister of State in the Ministry of Human Resource Development on December 26, 1990 the same was tabled in the Parliament on January 9, 1991.

Some Extracts from the Report regarding Structural Changes in Secondary Education.

In order to make, vocationalization a success, substantial structural changes were introduced in secondary education along the principles of modular courses and credit accumulation, at the same time providing flexibility for multiple exist and entry points for the students.

This made it possible for the schools to offer vocational courses in varying combinations with subjects such as Languages, Mathematics,
Sciences and Social Sciences. No doubt, vocational and non-vocational subjects should be inter-woven both at the level of content and Pedagogy.

3.8.1 CABE Committee or Janardhana Reddy Committee (1992):

The National Policy on Education (NPE) adopted by Parliament in May, 1986 was followed up by the Programme of Action (POA) which was adopted by Parliament in August, 1986. Para 11.5 of NPE envisages a review of the implementation of various parameters of the Policy every five years. The Central Government had, in May 1990, appointed a National Policy on Education Review Committee (NPERC) to review NPE, 1986, under the Chairmanship of Acharya Ramamurti. The committee submitted its report on 26th December 1990. The report was tabled in both the Houses of Parliament on 9th January 1991. The Central Advisory Board of Education (CABE) in its meeting held on 8-9 March, 1991 examined the procedure to be adopted for consideration of the report of the NPERC and decided that a CABE Committee be constituted by the Chairman, viz., Union Minister of Human Resource Development, to consider the recommendations of the NPERC.

In pursuance of the above decision, the Chairman of the CABE appointed a committee on 31st July, 1991, to review the implementation of various parameters of NPE taking into consideration the report of the NPERC and other relevant developments since the policy was formulated and to recommend modifications to be made in NPE. Shri Janardhana Reddy was the Chairman and 15 other members formed the committee.
3.8.2 Revised National Policy on Education (1992)

Revised National Policy on Education was presented in the Parliament (both the houses) on May 7, 1992. It may be recalled that NPE, 1986 had stipulated, "The implementation and parameters of the New Policy must be reviewed every five years.


From time to time a great concern regarding academic burden on students and unsatisfactory quality of learning has been voiced in our country.

With a view to have a fresh look on this problem, the Ministry of Human Resource Development, Government of India appointed a National Advisory Committee in March 1992. The Committee was headed by Prof. Yash Pal, Former Chairman, University Grants Commission and included 7 other members. The committee gave its recommendations in July 1993.

Recommendation No. 2(a):

The process of curriculum framing and preparation of textbooks be decentralized so as to increase teachers’ involvement in these tasks.

Recommendation No. 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.

Recommendation No. 12(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.

3.9.0 National Curriculum Framework for School Education-2000:

A discussion document was published by NCERT (National Council for Educational Research and Training) in the year 2000. This document provided a curricular framework for all the stages of school education – Elementary to Senior Secondary stage.

According to NCFSE-2000, General Objectives of Education are as follows:

School Curriculum should aim at enabling the learners to acquire knowledge, develop understanding and inculcate skills, positive attitudes, values and habits conducive to the all round development of their personality.

School curriculum should, therefore, help to generate and promote among the learners:

1. Language abilities (listening, speaking, reading and writing) needed for social living and further learning;
2. Communication skills (verbal and visual) for effective participation in day-to-day activities;

3. Mathematical abilities to develop a logical mind and enable learners to perform simple mathematical operations and their application in everyday life;

4. Scientific temper characterized by spirit of enquiry, courage to question and objectivity leading to elimination of obscurantism, superstition and fatalism;

5. Knowledge of scientific methods of enquiry and its use in solving problems;

6. Understanding of the environment in its totality (natural and social, and their interactive processes), the environmental problems and the ways and means to preserve the environment;

7. Abilities to investigate into various issues and problems at the local, regional, national and global levels and to make one's own independent assessment;

8. Appreciation of sacrifices and contributions made by the freedom fighters and social workers in India's freedom struggle and social regeneration, and readiness to follow their ideals;

9. Qualities that make a person humane and socially effective, giving meaning and direction to life. These values may be clustered around social/economic and personal/spiritual values;
10. Understanding the diversity in lands and people living in different parts of the country and the country’s composite cultural heritage;

11. Appreciation for the need of a balanced synthesis between the change oriented technologies and the continuity of the country’s traditions and heritage;

12. Knowledge of and respect for our national symbols and desire and determination to uphold the ideals of national identity and unity;

13. Understanding the positive and the negative impact of the processes of globalization, liberalization and localization in the context of our own country;

14. Knowledge, attitude and habits necessary for keeping physically and mentally fit and strong in conformity with the normal developmental pattern;

15. An awareness of the inherent equality of all and the need for global fraternity with a strong commitment to human values and to social justice;

16. Application of and readiness to practise in life the national goals of socialism, secularism, healthy democracy and non-violence;

17. Qualities and characteristics necessary for self-learning, self-directed learning and life-long learning leading to the creation of a learning society;
18. Ability to discover and appreciate beauty in different life situations, and integrate it into one's own personality;

19. Capacity not only to accumulate factual information but also to understand, reflect and internalize and develop insight;

20. Capability of appreciating and tolerating differences and diversities of various sorts/ideologies and the capacity to choose between alternative value systems.

**Scheme of students at Secondary Stage (2 years)**

(a) Three Languages

(b) Mathematics

(c) Science and Technology

(d) Social Sciences

(e) We may also consider here whether computer literacy could also be added as one of the subjects (10%) at this stage.

**Curriculum at Secondary Stage:**

Education in Science and Technology should aim at developing well defined abilities in cognitive, affective and psycho-motor domains such as spirit of inquiry, creativity, objectivity, courage to question and aesthetic sensibility. Therefore, curriculum in Science and Technology should be designed so as to enable the learner to acquire problem solving and decision making skills and to discover the relationship of Science with health, agriculture, industry and other aspects of daily life.

**Social Sciences:** The study of Social Sciences is of crucial importance as a component of general education at the secondary stage of school
education because it helps in understanding the human environment in its entity and in developing a broader perspective.

Flexibility in ways of thinking, tolerance for different cultures and self-moderation in exercising powers may be pre-requisite to guarantee the diversity of human cultures in future. Information and Communication Technology has provided immense possibilities for the learner to acquire information and to use it. Computers may help learning in Social Sciences by way of providing the following.

Computer aided drill and practice; computer based games, computer simulation and information retrieval. The major issues of the 21st century having relevance for Social Sciences teaching in schools may be as follows:

Poverty, population growth, Food Security, Water Scarcity, Climate Changes and Cultural Preservation. At the end of the secondary stage, the students should be able to show their knowledge, understanding and skills to a wide range of studies at various scale level/regional/national. Teaching of history should be objective and free from any communal, parochial, ideological and other prejudices. The stereotyped images and biases should be avoided in the teaching of Geography as well as other social sciences subjects. Economic and political literacy should be promoted. Along with other audio-visual materials, information technology should be used for effective learning.

Higher Secondary Stage:

It is a transition from general and undifferentiated curriculum to courses of specialized nature. Therefore, curriculum at this stage has a
hangover of general education and the challenge of specialization characteristics of the tertiary education. It also recommended semesterization of course at senior secondary stage.

Scheme of studies at Higher Secondary Stage:

The curriculum at this stage comprises (i) common foundation courses, and (ii) elective courses.

1. Language (one language)
2. General Studies
3. Work Education
4. Health and Physical Education
5. Elective Courses (3)
WEIGHTAGE FOR DIFFERENT CURRICULAR AREAS

- Language (One language): 12%
- General Studies: 10%
- Work Education: 8%
- Health and Physical Education: 10%
- Elective Courses - (3): 60%
Information and Communication Technology in Schooling:

Making computers available to increasing number of schools is the very first measure that the Information Technology (IT) Action Plan Proposes. Launching Schemes for easy-installment bank loans and other measures to help students, teachers and schools to buy computers is going to be a major support for the school community.

IT rich schools with substantial technological input have been the other recommendation. The council has worked out a blueprint for smart schools which the MHRD proposes to establish all over the country in limited number.
Table 3.5: A comparative profile of social studies in three generations of curriculum framework.

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Stages of Schooling</td>
<td>1. Primary</td>
<td>Three stages</td>
<td>Three stages</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Middle</td>
<td>1. Pre-Primary (2 years)</td>
<td>1. Pre-Primary (2 years)</td>
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<td></td>
<td></td>
<td>3. Lower Secondary</td>
<td>2. Elementary (8 years)</td>
<td>2. Elementary (8 years)</td>
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<td></td>
<td></td>
<td>4. Higher Secondary</td>
<td>(i) Primary (5 years)</td>
<td>i) Primary (5 years)</td>
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<td></td>
<td></td>
<td></td>
<td>(ii) Upper Primary (3 years)</td>
<td>(a) Classes I &amp; II</td>
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<td></td>
<td></td>
<td></td>
<td>3. Secondary (2 years)</td>
<td>(b) Classes III to V</td>
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<td></td>
<td></td>
<td></td>
<td>ii) Upper Primary (3 years)</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td>3. Secondary (2 years)</td>
</tr>
<tr>
<td>2.</td>
<td>Curriculum Areas</td>
<td>Seven Curriculum Areas:</td>
<td>Six Curricular Areas</td>
<td>Four Curricular Areas</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. The Sciences</td>
<td>1. Languages</td>
<td>1. Languages</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Work Experience</td>
<td>3. Environmental Studies</td>
<td>3. Environmental Studies/Social Science,</td>
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<tr>
<td></td>
<td></td>
<td>4. Social Sciences</td>
<td>Primary Sciences and Social Sciences</td>
<td>Science and Technology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. Languages</td>
<td>and Social Secondary</td>
<td>4. Work Education, Art Education and Health</td>
</tr>
<tr>
<td></td>
<td></td>
<td>activities</td>
<td>5. Art Education</td>
<td>subject named as Art of Healthy and Productive</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7. Health and Physical Education</td>
<td>6. Work Experience</td>
<td>Living is introduced at Primary level. Other</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>separate areas at Upper Primary and Secondary</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>level school work education, Art education,</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Health &amp; Physical Education.</td>
</tr>
<tr>
<td>3.</td>
<td>Social Personal Qualities</td>
<td>No specific reference is made. These are not</td>
<td>Same as 1975 Curriculum</td>
<td>More details are given regarding EQ and SQ but</td>
</tr>
<tr>
<td></td>
<td></td>
<td>identified at curriculum level stage-wise.</td>
<td></td>
<td>the social personal qualities are not</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>identified stage-wise.</td>
</tr>
<tr>
<td>4.</td>
<td>Social Studies as core subject and its organization</td>
<td>Introduced as core curricular areas at Primary level classes I &amp; II as environmental study. I. Social studies, Environmental study. II. Science introduced at middle class VI to VIII as social science, same at lower secondary and higher secondary</td>
<td>Introduced as core curricular area. 1. At pre-primary stage as a component of educational experiences for social participation. 2. At primary level same as in 1975 curriculum 3. Inclusion of core elements in the curriculum of social science at all levels.</td>
<td>Introduction as core-curricular area. 1. At early childhood education instilling socialization and environmental awareness through some educational experiences. 2. At primary level – classes I &amp; II environment in totality through different subjects. No single area of study called environmental studies is introduced. 3. At upper primary and secondary, it is called social science. 4. Inclusion of core elements in the curriculum of social science at all levels.</td>
</tr>
<tr>
<td>5.</td>
<td>Approach of organization of content units</td>
<td>1. Integrated approach at primary level. 2. Three approaches (i) Separate approach at middle, lower secondary and higher secondary level. (ii) Group approach (iii) Integrated approach states are free to choose any one.</td>
<td>1. For Primary level same as in 1975 curriculum. 2. Separate approach at upper primary and secondary level.</td>
<td>1. Primary level – integrated approach. 2. Secondary level – integrated approach. The themes and issues as basis of organization of the content areas.</td>
</tr>
</tbody>
</table>
| 6. | Teaching strategy | 1. A chapter entitled some aspects of the Methodology of education and teaching of subjects is inserted. 2. (i) Integrated approach of teaching environmental studies at primary level | A chapter entitled emerging concerns and imperatives included. 1. at Primary level i) Child-centered approach ii) Teacher as a facilitator iii) Appropriate methods to facilitate interactive process | 1. Primary level - integrated approach coupled with activity approach. 2. Secondary level – Integrated way of teaching with greater depth on processes and patterns in the interaction of man with environment. 3. Instructional strategies may assume
| 7. Evaluation | No specific reference of any specific procedure in connection with social studies evaluation for any level. | Same as in 1975 curriculum framework | Same as in earlier curriculum frameworks. |

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3.9.1. Conclusion:

This chapter has focused the efforts carried out by the Government of India in Improving the Curriculum of Secondary Schools with special reference to Science, Social Studies and Information Technology. It has outlined the recommendations of committees, commissions and policies brought forward for the enrichment of secondary school curriculum since Independence. Next chapter deals with the Methodology and Design of the study.