CHAPTER – II

REVIEW OF RELATED STUDIES
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Terms of Reference :

Under the Terms of Reference, the Government was asked to suggest measures for its reorganization and improvement with particular reference to
1. the aims, organization and content of secondary education;
2. its relationship to primary, basic and higher education;
3. the inter-relation of secondary schools of different types and
4. other allied problems.

Summary of Recommendations :

1. Aims and Objectives of Secondary Education :

The Commission has said in their report : “As political, social and economic conditions change and new problems arise, it becomes necessary to re-examine carefully and study clearly the objectives which education at each stage should keep in view. Moreover, this statement must take into account not only the facts of the existing situation but also the direction of its development and the nature and type of the social order that we envisage for the future to which education has to be geared”.

In the Commission's opinion, the most outstanding and educationally relevant facts in the Indian situation were :

i) the adoption of the goals of democracy and socialism necessitating the development among the people of a broad, national and secular outlook;
ii) the extreme poverty of the country and urgency for promoting its economic growth; and
iii) the absence of educational facilities needed for developing all aspects of the
human personality and the neglect of cultural pursuits and activities.

On the basis of this analysis, the Commission recommended that secondary education should be reoriented to the following aims and objects:

a) Development of qualities essential for creative citizenship: This includes the development in the students of secondary schools of those habits, attitudes and qualities of character which are essential for creative citizenship in a democratic society. Among these qualities, which are to be fostered through curricular and co-curricular activities in secondary schools, are:
   i) The capacity for clear thinking (allied with the capacity for clearness in speech and writing);
   ii) The scientific attitude of mind;
   iii) A receptivity to new ideas;
   iv) A respect for the dignity and worth of every individual;
   v) The ability to live harmoniously with one's fellowmen through the cultivation of discipline, cooperation, social sensitiveness, tolerance and
   vi) A sense of true patriotism.

b) The promotion of vocational efficiency: This involves not only the creation of a new attitude to work and an appreciation of the dignity of manual labour but also the development of the students' technical skill and efficiency through greater emphasis on craft and productive work and the diversification of courses at the secondary stage.

c) Development of personality: This implies cultivation of the students' literary, artistic and cultural interests for a fuller development of their personalities. This means the provision of subjects like art, craft, music, dancing and hobbies in the secondary school curricula.
(d) The training for leadership: The training of persons who, on completion of the Secondary stage, would be able to assume the responsibilities of leadership at the intermediate level.

2. Methods of Teaching:

a) Inculcation of values, attitudes and work habits: The methods of teaching in schools should aim not merely at the imparting of knowledge in an efficient manner, but also at inculcating desirable values and proper attitudes and habits of work in the students.

They should, in particular, endeavour to create in the students a genuine attachment to work and a desire to do it as efficiently, honestly and thoroughly as possible.

b) Activity and project methods: The emphasis in teaching should shift from verbalism and memorization to learning through purposeful, concrete and realistic situations and, for this purpose, the principles of Activity Method and Project Method should be assimilated in school practice.

Teaching methods should provide opportunities for students to learn actively and to apply practically the knowledge that they have acquired in the classroom. Expression Work of different kinds must, therefore, form part of the programme in every school subject.

c) Emphasis on clear thinking and expression: In the teaching of all subjects special stress should be placed on clear thinking and clear expression both in speech and writing.

d) Training pupils in techniques of study: Teaching methods should aim less at imparting the maximum quantum of Knowledge possible, and more on training students in the techniques of study and methods of acquiring knowledge through personal effort and initiative.
e) **Instruction to suit different student abilities** : Attempt should be made to adopt methods of instruction to the needs of individual students as much as possible so that dull, average and bright students may all have a chance to progress at their own pace.

f) **Group projects and activities** : Students should be given an adequate opportunity to work in groups and to carry out group projects and activities so as to develop in them the qualities necessary for group life and cooperative work.

3. **Examinations and Evaluation** :

   Reviewing the defects of examinations at the secondary stage, the Education Commission said:

   “The examinations today dictate the curriculum instead of following it, prevent any experimentation, hamper the proper treatment of subjects and sound methods of teaching, foster a dull uniformity rather than originality, encourage the average pupil to concentrate too rigidly upon too narrow a field and thus help him to develop wrong values in education. Pupils assess education in terms of success in examinations. Teachers, recognizing the importance of the external examination to the individual pupils, are constrained to relate their teaching to an examination which can test only a narrow field of the pupil's interests and capacities and so inevitably neglect the qualities which are more important though less tangible.”

a) **External Examination — Introduction of Objective Type Tests** :

   The number of external examinations should be reduced and the element of subjectivity in the essay type tests should be minimized by introducing objective tests and also by changing the type of questions.

b) **School records for assessment of all-round progress** : In order to find out
the pupil's all-round progress and to determine his future, a proper system of school records should be maintained for every pupil indicating the work done by him from time to time and his attainments in the different spheres.

e) In the final assessment of the pupils due credit should be given to the internal tests and the school records of the pupils.

d) **Symbolic marking to replace numerical marking**: The system of symbolic rather than numerical marking should be adopted for evaluating and trading the work of the pupils in external examinations and in maintaining the school records.

e) **One public examination – final comprehensive certificate**: There should be only one public examination at the completion of the Secondary School course.

f) The Certificate awarded should contain, besides the results of the public examination in different subjects, the results of the school tests in subjects not included in the public examination as well as the gift of the school records.

h) **Board of Secondary Education to be set up**: There should be a Board of Secondary Education consisting of not more than 25 members with the Director of Education as its chairman to deal with all matters of education at the Secondary stage and to lay down general policies.

   A sub-committee of the Board should deal with the conduct of examinations.
4. Buildings and Equipments:

a) School buildings-space per pupil: Normally, in designing buildings for schools, care should be taken to see that an area of not less than 10 sq. ft. is provided per student in the classroom.

b) Optimum strength of class and school: The optimum number of boys to be admitted to any class should be 30 and the maximum should not in any case exceed 40; the optimum number in the whole school should be 500 while the maximum should not exceed 750.

c) Research required on school buildings, furniture and equipment: In the type design of schools as well as the furniture, etc., research should be carried on to improve functional efficiency and to adjust them to Indian conditions.

   An Expert Committee should be appointed to lay down carefully the amount and the kind of equipment required for various types of diversified courses and workshops.

d) Land for educational purposes: The State Governments and the Centre should, wherever possible, assign lands to schools for playgrounds, buildings or agricultural farms and other necessary purposes without any charge.

e) Exemption from customs duty for equipment and books: In order to popularize progressive teaching methods and facilitate their introduction, “Experimental” and “Demonstration” schools should be established and given special encouragement where they exist, so that they may try out new methods freely without being fettered by too many departmental restrictions.

5. Teachers:

a) Guide material for teachers: Suitable literature for the guidance and inspiration of teachers should be produced by the Education Departments of all
States and either the office of the Director of Education or one of the training colleges should be adequately equipped for the purpose.

**b) Special committee to review the scales of pay**: A special committee should be set up to review the scales of pay of teachers of all grades and recommend such scales of pay that will meet in a fair and just manner the varying cost of living.

National Policy On Education 1979 suggests that “the present system of education must be reorganized is the light of contemporary Indian realities and requirements”.

Secondary education is very important for the continuation among secondary (10\textsuperscript{th} grade), higher secondary (12\textsuperscript{th} grade) and primary education. National Policy on Education 1979 rightly comments, “The entire educational system has to be seem as one chain”.

It is true that after independence number of secondary schools have been increased rapidly in India supported by the following informations:

- No. of schools in 1950-51 — 7300 (Secondary Level)
- No of schools in 1982-83 — 52, 279


**Main Recommendations**:

The report makes recommendations about various sectors and aspects of education, some of which are as follows:

1. Work-experience and social service should be introduced as integral parts of general education at more or less at all levels of education.
2. Secondary education should be vocationalised.
3. Mother-tongue has a pre-eminent claim as medium of instruction at school
and college stages. Moreover, the medium of education in school and higher education should generally be the same. The regional language should, therefore, be adopted as the media of education in higher education.

4. The teaching and studying of English should continue to be promoted right from the school stage. English will serve as a link language in higher education for academic work and intellectual inter-communication.

5. The Central and State Governments should adopt measures to introduce education in moral, social and spiritual values in all institutions under their control.

6. Secondary schools should be of two types – high schools providing a course of 11 – 12 years.

7. Education, as distinguished from pedagogy, should be recognised as an independent academic discipline.

8. Duration of training courses should be two years for primary teachers who have completed the secondary school course. It should be one year for the graduate students.

9. Science and mathematics should be taught on a compulsory basis to all pupils as a part of general education during the first ten years of schooling.

10. No single stage of education need be designated as basic education, but its essential principles should be retained to guide and shape the educational system at all levels.

11. External examinations should be improved by orienting question papers to objectives rather than to acquisition of knowledge, by improving the nature of questions, adopting scientific scoring of scripts.

12. Internal assessment should be comprehensive and evaluate all aspects of student growth.

13. Some centres of advanced study and a small number of major universities should be set up with the view to achieving highest international standards.

14. Education for agriculture, and research in agriculture and allied sciences
should be given a high priority in the scheme of educational reconstruction.

15. The Ministry of Education, in collaboration with the Asian Institute of Educational Planning, should under. According to Indian Parliamentary & Scientific Committee 1961 science education should be imparted on the basis of practical orientation and vocation based. Science education in secondary level would be on the general basis.

2.3 Education in Secondary Schools regarding Teaching Learning System

(G. I. Press, New Delhi, 1964)

Main Recommendations:

The following are some of the recommendations made by the panel:

1. The Education Department of each State should frame proposals for the new academic year well in advance of the start of the academic session furnishing full details. This will help schools to complete formalities and procure science equipment in time for the new session.

2. When science teaching is introduced in a high school, a minimum amount of Rs. 10,000 may be earmarked for setting up a reasonably well-equipped laboratory for Physics and Chemistry. In case Biology is also introduced, an additional amount of Rs. 300 should be provided.

3. For middle schools, a sum of Rs. 4,000 for science equipment is considered essential.

4. Each middle and high school should have a workshop attached to it for which a grant of Rs. 1,000 should be sanctioned separately.

5. Adequate facilities should be provided to science teachers and students for working on hobbies during school hours and in spare time. Refresher courses and workshops should be arranged for teachers periodically.

6. The creation of a separate branch of Science Education in each State Department of Education under a special officer would strengthen the steps being taken at various levels for improvement of science teaching. The
report has six appendices dealing with various aspects of science equipment and apparatus required for high schools and middle schools.

After post independence (1947), to impart science education was rather difficult in India. Because before independence science education was limited in a particular section. But after independence separate educational strategy had been taken where mass education was an emergent need. Therefore a balance had to maintain between the need and demand on science education on that time. In 1964 the report was basically on the above reason specially framed on the basis of socio-economic condition. Science education was encouraged on the secondary schools in India in the above report.

2.4 National Knowledge Commission and Higher Education

Meaningful reform of the higher education system, with a long-term perspective is both complex and difficult.

First, it is essential to reform existing public universities and undergraduate colleges.

Second, it is necessary to overhaul the entire regulatory structure governing higher education.

Third, every possible source of financing investment in higher education needs to be explored.

Fourth, it is important to think about pro-active strategies for enhancement of quality in higher education.

Fifth, the time has come to create new institutions in the form of National Universities that would become role models as centres of academic excellence.

Sixth, the higher education system must be so designed so that it provides access to marginalized and excluded groups.

Even so, we believe that reforms in the following spheres, along the lines suggested by us, are not only possible but would also make a difference.
Number and Size:

India has about 350 universities. This number is simply not enough with reference to our needs in higher education, or in comparison with China which has authorized the creation of 1250 new universities in the last three years. Yet, some of our universities are much too large, for ensuring academic standards and providing good governance. We need to create more appropriately scaled and more nimble universities. The moral of the story is not only that we need a much larger number of universities, say 1500 nationwide by 2015, but also that we need smaller universities which are responsive to change and easier to manage.

Curriculum:

The syllabi of courses in universities, which remain unchanged for decades, need to be upgraded constantly and revised frequently. The laws of inertia reinforced by resistance to change must be overcome. Universities should be required to revise or restructure curricula at least once in three years. These revisions must be subjected to outside peer review before implementation. The process for such revisions should be streamlined and decentralized, with more autonomy for teachers, through a change in statutes wherever necessary. For existing systems often act as major impediments to a timely or speedy revision of curricula. There should be some mode of censure for departments or universities that do not upgrade their courses regularly. It needs to be recognised that it is very difficult to introduce new courses or innovative courses in universities because of departmental divides. Appropriate institutional mechanisms should be put in place to resolve this problem.

Assessment:

The nature of annual examinations at universities in India often stifles the teaching-learning process because they reward selective and uncritical learning.
There is an acute need to reform this examination system so that it tests understanding rather than memory. Analytical abilities and creative thinking should be at a premium. Learning by rote should be at a discount. Such reform would become more feasible with decentralized examination and smaller universities. But assessment cannot and should not be based on examinations alone. There is a clear need for continuous internal assessment which empowers teachers and students alike, just as it breathes life back into the teaching learning process. Such internal assessment would also foster the analytical and creative abilities of students which are often a casualty in university-administered annual examinations. To begin with, internal assessment could have a weight of 25 percent in the total but this should be raised to 50 percent over time.

**Course Credits:**

The present system is characterised by too many rigidities and too few choices for students. Universities that are smaller, or run semester-based systems, are obviously more flexible. Even in large universities, however, it is necessary to introduce greater diversity and more flexibility in course structures. This would be the beginning of a transition to a course credit system, where degrees are granted on the basis of completing a requisite number of credits from different courses. Every student should be required to earn a minimum number of credits in his/her chosen discipline but should have the freedom to earn the rest from courses in other disciplines. It is essential to provide students with choices instead of keeping them captive.

**Research:**

We attempted to create stand-alone research institutions, pampered with resources, in the belief that research should be moved out of universities. In the process, we forgot an essential principle. There are synergies between teaching
and research that enrich each other. And it is universities which are the natural home for research. What is more, for universities, research is essential in the pursuit of academic excellence. It is time to reverse what happened in the past and make universities the hub of research once again. This would need changes in resource-allocation, reward-systems and mindsets. Substantial grants should be allocated for research. The provisions of these grants should be competitive and the criteria for these grants should be different from the usual criteria for non-plan and plan grants.

**Faculty:**

There must be a conscious effort to attract and retain talented faculty members. This is necessary because talented students who are potential faculty members have choices that are far more attractive in other professions in India or in the academic profession outside India. It is necessary to provide working conditions in the form of office space and research support combined with housing. But it may not be sufficient. This must be combined with some incentives and rewards for performance. There is, however, another dimension to the problem. Universities do not always choose the best in part because of native-son/daughter policies which leave them to select their own former students. This tends to lower quality and foster parochialisation in universities. Therefore, cross-pollination between universities should be encouraged. It may be worth introducing a ceiling, say one-half or even one-third, on the proportion of faculty members than can be hired from within the university. This would almost certainly engender greater competition and more transparency in faculty appointments.

**Finances:**

There is a serious resource crunch in universities which leaves them with little financial flexibility. In general, about 75 percent of maintenance expenditure is on salaries and pensions. Of the remaining 25 per cent, at least 15
percent is absorbed by pre-emptive claims such as rents, electricity, telephones and examinations. The balance, less than 10 percent, is not even enough for maintenance let alone development. Laboratories and libraries languish while buildings crumble. But that is not all. In most universities, plan (investment) expenditure is less than 5 per cent of non-plan (maintenance) expenditure. Such a small proportion of investment in total expenditure can only mortgage the future. It is doing so. The time has come for some strategic thinking on the re-allocation of budgets for universities with some allocation for development grants and on needs other than salaries. The criteria for resource allocation should seek to strike a much better balance between providing for salaries/pensions and providing for maintenance/development/investment. These criteria should recognise the importance of a critical minimum to ensure standards and strategic preferences to promote excellence.

Infrastructure:

The elements of infrastructure that support the teaching-learning process, most directly, need to be monitored and upgraded on a regular basis. This means attention particular attention to libraries and laboratories, in addition to class rooms, sports facilities and auditoriums. It is imperative that universities provide broadband and connectivity to all students and teachers in campuses. In parallel, information technology systems should be used for admissions, administration and examinations along with other relevant web services for campus communities. And, as soon as possible, a digital infrastructure for networking universities should be put in place.

Governance:

There is an acute need for reform in the structures of governance of universities. The present system is flawed. On the one hand, it does not preserve autonomy. On the other, it does not promote accountability. The autonomy of
universities is eroded by interventions from governments and intrusions from political processes. This must be stopped. At the same time, there is not enough transparency and accountability in universities. This must be fostered. It is exceedingly difficult to provide generalized prescriptions. Some steps, which would constitute an important beginning, are clear. First, the appointments of Vice Chancellors should be based on search processes and peer judgment alone. These must be freed from direct or indirect intervention on the part of governments. Once appointed, Vice Chancellors should have a tenure of six years, because the existing tenure of three years in most universities and five years in central universities is not long enough. Second, the size and composition of University Courts, Academic Councils and Executive Councils slows down decision-making processes and sometimes constitutes an impediment to change. University courts, with a size of 500 plus, which are more a ritual than substance, could be dispensed with. Large academic councils do not meet often. Even when they meet, decisions are slow to come. Thus, standing committees of academic councils, which are representative, should be created for frequent meetings and expeditious decisions. The Vice-Chancellor should, then, function as a chief executive officer who has the authority and the flexibility to govern with the advice and consent of the executive council which would provide checks and balances to create accountability. Third, experience suggests that implicit politicisation has made governance of universities exceedingly difficult and much more susceptible to entirely non-academic interventions from outside. This problem needs to be recognised and addressed in a systematic manner not only within universities but also outside, particularly in governments, legislatures and political parties.

**Undergraduate Colleges:**

Undergraduate education, which accounts for about 85 percent of the enrolled students, is the largest component of our higher education system. It is
imparted through colleges where students enroll for first degrees in Arts, Science or Commerce. There are a total of about 17,700 undergraduate colleges. Of these, a mere 200 colleges are autonomous. The rest, as many as 17,500 colleges, are affiliated to, or constituent in, 131 universities. On average, each university has more than 100 affiliated colleges, but there are some universities each of which has more than 400 affiliated colleges. This system of affiliated colleges for undergraduate education, which may have been appropriate fifty years ago, is neither adequate nor appropriate at this juncture, let alone for the future. It is cumbersome to manage. And it is difficult to ensure minimal academic standards across the board. The problem has at least three dimensions. First, it imposes an onerous burden on universities which have to regulate admissions, set curricula and conduct examinations for such a large number of undergraduate colleges. The problem is compounded by uneven standards and geographical dispersion. Second, the undergraduate colleges are constrained by their affiliated status, in terms of autonomy and space, which makes it difficult for them to adapt, to innovate and to evolve. The problem is particularly acute for undergraduate colleges that are good, for both teachers and students are subjected to the ‘convoy problem’ insofar as they are forced to move at the speed of the slowest. There is also a problem for undergraduate colleges that are not so good, or are poor, because universities cannot address their special needs or unique problems. Third, it is difficult to set curricula and assess performance for such a large number of students where there is such a large dispersion in performance at school before entering college. This reality tends to make courses less demanding and examinations less stringent across the board. In fact the design of courses and examinations needs to be flexible rather than exactly the same for large student communities. There is an urgent need to restructure the system of undergraduate colleges affiliated to universities. In doing so, it is important to make a distinction between undergraduate colleges that already exist and undergraduate colleges that will be established in the future. It is also
important to remember that undergraduate colleges are afflicted by problems which are very similar to those that afflict universities. The most obvious solution is to provide autonomy to colleges, either as individual colleges or as clusters of colleges.

2.4.1 Recommendations on School Education (dated 3rd February, 2008)

As you have repeatedly emphasized, ensuring quality school education to all is the foundation upon which any further advances towards a knowledge society must be based. Noting the crucial importance of school education, the National Knowledge Commission (NKC) held a series of workshops and consultations around the country involving a very wide range of stakeholders, to discuss issues of quantity, quality and access in school education. NKC recognizes that the primary responsibility for school education is borne by the state governments, and therefore any policy changes must be with the full participation and involvement of the States. Nevertheless, NKC believes that positive changes in systems of schooling will require the active involvement of the central government as well state governments, not only in the matter of providing resources but also in promoting organizational and other changes. We have a number of suggestions and recommendations covering the different aspects of school education, but the essential thrust can be summarized as follows by Sam Pitroda, Chairman, National Knowledge Commission.

1. Central Legislation for the Right to Education, backed by Financial Commitment

NKC endorses the speedy enactment of a central legislation that will ensure the right of all children in the country to good quality school education up to the age of fourteen, supported with financial commitments of the central and state governments. This obviously requires substantially increased public spending for both elementary and secondary school education, which must be
seen as a priority area for spending. Currently school education is highly segmented, even in government run institutions, as a result of the parallel track of “education centres” in some states. These separate systems must be integrated to give all children access to schools of acceptable quality, which will obviously require additional spending.

2. More Flexibility in Disbursal of Funds

However, there is a strong case for changes in the manner in which such expenditure is incurred. The current norms for central government disbursal to states of funds for, including for Sarva Shiksha.

3. Letter on School Education

National Knowledge Commission Abhiyan (SSA), the planned SUCCESS program for secondary education and other central schemes, are too rigid and must be made more flexible. NKC strongly recommends a system of funds transfer and accounting that will allow for regional and other differences as well as changing requirements over time, and thereby allow state governments to use the resources in the most effective way. There should also be greater flexibility in disbursing funds down to the school level and a greater degree of autonomy of local level management in the use of funds. The norms and rules should allow schools to adapt to local conditions and meet particular requirements of their students.

4. Decentralization and Greater Local Autonomy

Community participation is an important instrument to ensure accountability and improve the day-to-day functioning of schools. This in turn means that the management of schools, including the use and management of funds, should be decentralized to local authorities as far as possible, whether they be panchayats, Village Education Committees or municipalities, and to School Boards that have representation of all stakeholders including parents.
5. Expansion of Functional Literacy

NKC would like to stress the continuing importance of a focus on expanding functional literacy among the population. Illiteracy remains a major problem, even among the age-group 15-35 years, and therefore literacy programmes must be expanded rather than reduced, and given a different focus that is directed towards improving life skills and meeting felt needs, especially (but not only) among the youth.

6. Planning for School Infrastructure

It is important to remember that land is an essential requirement of schools, and this requirement is likely to increase in the near future given the expansion implied by demographic changes and need to ensure universal schooling. Therefore urban master plans and local development plans must explicitly incorporate the physical requirements for schooling, including provisions for play grounds and other school facilities.

7. Enabling and Regulating Mechanisms for Private Schools

Since private schools play an important role in the provision of education, there is need for both enabling and regulating mechanisms to be developed and strengthened for them. There should be transparent, norm-based and straightforward procedures for the recognition of private schools, to reduce harassment and bureaucratic delay. There should also be transparent criteria as for the disbursement of aid from the government to some self-financing schools, especially those which cater to underprivileged children, and clear norms with respect to the ability of school managements to raise resources from other sources. The monitoring of private schools, in terms of ensuring a transparent admissions process, regulation of fee structures, as well as meeting minimum set standards for quality of teaching and infrastructure, also requires attention. The possibility of greater exchange between schools, including mentoring of one school by another, should be allowed and encouraged.
8. Database on School Education

Educational planning and monitoring are made much more difficult because of the lack of comprehensive and accurate data on schools, school-age children and actual attendance of both students and teachers. The collection and speedy dissemination of accurate and current data on schooling must be made a priority. It is necessary to create a complete database on schools and school-age children so as to track the actual coverage and quality of schooling at different levels, and to make it widely available in a timely manner. Such data collection may be made an essential part of the fund allocation for school education, with appropriate institutional mechanisms.

9. More Co-ordination between Departments

The multiplicity of management structures and government departments that currently governs schooling creates confusion, unnecessary replication and possibly inconsistent strategies across different schools. There must be greater co-ordination between different departments of government on school education policy, even while ensuring more autonomy to the local management of schools.

10. National Evaluation Body for Monitoring Quality

Educational administration also needs to be more conscious of actual learning outcomes at different levels, which will determine both policy and functioning. NKC therefore proposes a national evaluation body to monitor the quality of both government and private schools, using a results based monitoring framework based on a short list of monitorable criteria that include both process and outcome indicators.

11. Revamping School Inspection

The system of school inspection needs to be revamped and revitalized, with a greater role for local stakeholders and greater transparency in the system. The solution does not lie in simply expanding the system – rather, we
need to develop systems to ensure meaningful monitoring, including provision of greater facilities to school inspectors, a separation of inspection of qualitative and administrative aspects, transparency in the criteria of inspection, and greater involvement of local stakeholders.

12. Teachers and Teacher Training

Teachers are the single most important element of the school system, and the country is already facing a severe shortage of qualified and motivated school teachers at different levels. It is urgent to restore the dignity of school teaching as a profession and provide more incentives for qualified and committed teachers. Non-teaching official duties such as electoral activities should not be allowed to interfere with the teaching process. Forums that allow and encourage teachers to exchange ideas, information and experiences, including a web-based portal, should be developed. At the same time, there should be transparent systems for ensuring accountability of school teachers. As far as possible, teachers should be recruited to particular schools. The training of teachers is a major area of concern at present, since both pre-service and in-service training of school teachers is extremely inadequate and also poorly managed in most states. Pre-service training needs to be improved and differently regulated in both public and private institutions, while systems for in-service training require expansion and major reform that allows for greater flexibility system, especially at Board level but also earlier.

13. Reforms in the Curriculum and Examination System

Curriculum reform remains a critically important issue in almost all schools. School education must be made more relevant to the lives of children. There is need to move away from rote-learning to understanding concepts, developing good comprehension and communication skills and learning how to access knowledge independently. This also requires substantial changes in the examination.
14. Use of Information and Communication Technology

Wherever feasible, ICT should be made more accessible to teachers, students and administration for learning, training, research, administration, management, monitoring, etc. This requires the provision of more facilities such as computers as well as connectivity and broadband facilities. Computer-aided learning also requires training of teachers and other staff in order to make the best use of the technology.

15. English Language Teaching

Proficiency in English is widely perceived as an important avenue for employment and upward mobility, which also greatly facilitates the pursuit of higher education. The incorporation of English into the curriculum through the teaching of English as a language in Class I and teaching of one other subject in English medium in later classes requires making pedagogical changes to contextualize language learning, increasing the availability of English language teachers and providing more bilingual and supplementary teaching materials. At the same time, multilinguality must be promoted and language issues must be explicitly taken on board in designing school curricula and methods of pedagogy.

16. Interventions to ensure Access of Educationally Deprived Categories

Special interventions are necessary to ensure greater access to education of educationally deprived categories, and some proposals for this are developed in more detail in the accompanying Note.

2.4.2 Quantity and Resources

1. Substantially increased public spending is required for both elementary and secondary education

As we have already stated in two previous letters, we strongly endorse the speedy enactment of a central legislation that will ensure the right of all children
in the country to good quality school education up to the age of fourteen. We also believe that this should be extended to cover universal schooling up to the age of sixteen as soon as possible.

2. **Urban planning and local planning must explicitly incorporate the physical requirements for schooling, including provisions for play grounds and other school facilities**

   It is important to remember that land is an essential requirement of schools, and this requirement is likely to increase in the near future given the expansion required by demographic changes and the need to ensure universal schooling. In the context of rapid urbanization, it has been found that urban conglomerations often come up without adequate provision for ensuring the physical space required for schools in the vicinity. This is particularly a problem in new settlements with quickly increasing density of population, not only in large cities but also in smaller towns and fast growing villages. This makes it difficult to establish schools where required, and to ensure that schools are able to provide all the necessary facilities including sports fields, etc. It is essential that the urban land use policies and regulations in all states and municipalities explicitly factor in the physical requirements of schools in areas of a certain population density. Similarly in rural areas, there must be adequate provision for land for setting up schools in areas that surpass a certain population density. In rural areas with low population density, difficult terrain or extreme climatic conditions, the government may consider the setting up of residential schools, which could also address the problem of migrant labourers and nomadic populations.

3. **The norms for central government disbursal to states of Sarva Shiksha Abhiyan (SSA) funds and other central schemes for school education are too rigid and must be made more flexible**

   The current system of funds transfer and the accounting rules create
unnecessary rigidities that often do not allow the state governments to use the money in the most efficient or desirable way, and also lead to less than complete utilization of the budgetary allocation. Some of these problems include:

- very rigid norms on unit costs and what is allowed in terms of spending, that do not recognize the diverse requirements of different states or particular regions;

- inadequate financial provisions for infrastructure such as buildings etc, especially for some states and cities, which leads to the creation of poor quality infrastructure;

- an inflexible accounting system that does not allow transferring funds across heads to meet particular or changing requirements, and therefore inhibits full utilization and also prevents synergies from developing;

- insufficient allocation for repair and maintenance of infrastructure;

- treating rural and urban schools in the same manner even though the requirements are often very different (for example, urban government schools may require different infrastructure and facilities in order to attract students);

- treating all districts and geographical areas in the same manner regardless of the degree of backwardness, topographical conditions, etc. (This is especially a problem for schools in hilly or heavily forested areas or those with poor physical connectivity, for which per capita allocations are the same as for other more accessible areas);

- problems in the timing of fund transfer, as well as uncertainties in fund provision created by the insistence on matching funds and the fact that plan ceilings keep changing every year.
4. There should be greater flexibility in disbursing funds down to the school level and a greater degree of autonomy of local level management in the use of funds

Even within the states, the norms for fund disbursal and the requirements are often very time consuming and breed delays and unnecessary rigidities. There should be recognition of differences in per capita resource requirement according to particular criteria, such as geographical and spatial characteristics, the presence of children with special needs, seasonality and other features. In addition, there is a strong case for providing greater autonomy to local level management of schools, including locally elected bodies, school boards, Village Education Committees, etc., in the use and management of funds, subject to some overall criteria. Within the stipulated norms for expenditure, there should be scope for greater flexibility in the use of funds in response to local needs and local innovation.

5. There should be transparent, norm-based and straightforward procedures for the recognition of private schools, as well as for the disbursement of aid from the government to self financing schools and the ability of school management to raise resources from other sources

Private schools play a significant role in dispensing school education. It is estimated by NUEPA that around 15 per cent of schools in the country are privately owned and managed, while in some urban areas, private schools cater to a very large proportion of school going children. Their role must be recognized, and those providing quality education should be encouraged, especially when they cater to less privileged children.

However, many private schools have identified the time-consuming procedures for renewal of recognition from the government, which have to be undertaken at relatively frequent intervals, as a source of harassment.

It is necessary to simplify the rules and reduce the multiplicity of
clearances required for private schools, by developing a modality for coordinated point of clearance as far as possible. There is also a case for increasing the time period for which recognition is granted to such schools, especially those with a proven track record. Transparency in dealings between the government and private schools will also be aided if the information on rules and criteria for registration and the results of all school applications for granting of recognition are made public in an accessible form, including by making the relevant information available on websites.

Those charitable schools that provide quality education to children from underprivileged and marginalized sections of society deserve encouragement, and may be considered for receipt of government resources, according to transparent and norm-based procedures. However, all mechanisms of government aid disbursement to privately run schools should be transparently conducted and according to defined norms. There is a widespread perception that government rules currently reduce the ability of school managements to raise resources from other sources for the expansion of infrastructure or to provide other facilities.

This varies across states, but in general in most states the current system does allow schools to raise funds from donations, resources extended from the panchayat and other sources. However, it is important to ensure that the available flexibility for school management to raise resources should be widely known and publicized. In addition, innovative methods of raising additional resources could be allowed and encouraged. For example, schools, particularly in urban areas, could use assets such as buildings during non-school hours to generate additional funds to improve the quality of facilities.
6. Illiteracy remains a major problem, and therefore literacy programmes cannot be ignored or given less importance. Expenditure on the National Literacy Mission must be expanded rather than reduced, and given a different focus.

The shift in policy focus from the National Literacy Mission (NLM) to the Sarva Shiksha Abhiyan has led to a declining emphasis on the need to ensure universal functional literacy. However, according to the 2001 Census, a significant proportion of the population - nearly half of all females and one-quarter of males - remains functionally illiterate. According to the NSSO, a significant proportion of households in 2004-05 (more than a quarter in rural India and nearly ten per cent in urban India) have no literate member.

7. Early childhood education is extremely important and must be universalized.

There are two aspects to ensuring the universalization of early schooling and pre-school education. The first is the systematic extension of balwadis with trained staff to handle child pedagogy. The second is the provision for one year of pre-schooling in all institutions of elementary education. Both of these have implications for resource allocation and recruitment of the requisite staff.

8. The collection and speedy dissemination of accurate and current data on schooling must be made a priority.

It is necessary to create a complete database on schools and school-age children so as to track the actual coverage and quality of schooling at different levels, and to make it widely available in a timely manner. Such data collection may be made an essential part of the fund allocation for school education, with appropriate institutional mechanisms.

India has an extensive and regular mechanism of data collection for primary education. However, its methodology and use leave much to be desired.
For example, at present there is no reliable method for establishing which children are in schools. The process of data collection must be streamlined, made less time consuming and more relevant.

- A comprehensive mapping is required of schools and children of school-going age, so as to have accurate information on which children in which localities are enrolled, and attending which schools, as well as those not enrolled. This would also map out localities where there are high rates of dropout and/or non-enrolment.

- A tracking mechanism for all school children should be set up, to track their individual school going status, and progress in school. This tracking should cover both government schools and private schools. This would ensure universal access for children in all locations, as well as for girls and specific categories. A tracking mechanism will also facilitate checking for drop-outs and related problems, and allow for speedy intervention to address such problems. It should be noted that there are already ongoing initiatives in this regard in some states, which can be replicated and scaled up.

- Data collected for the purposes of planning must provide all the relevant information. This is also important with respect to information on infrastructure provision: for example the number of rooms should also mention whether these are electrified; where availability of toilets is described, there should also be information on the availability of water in the toilets.

- Safeguards must be instituted against "creative readjustment" of data, which is a common problem given the structure of incentives and the fact that the data are most often provided by the teachers or school management. This requires that data should be collected by independent agencies as far as possible, or necessarily subject to frequent and random cross-checks.
• ICT must be integrated for data collation and management, wherever required. A local area network with digital entry provisions could be set up to make it easier for the teachers and others who provide and use the data.

• The data thus collected must be freely available and easily accessible, provided on dedicated websites in addition to the usual means of publication.

• More specialized micro-level surveys and research should be commissioned. There should also be attempts to bring together other relevant research for easy access by practitioners.

2.4.3 Quality and Management

Currently school education is highly segmented, even in government-run institutions, as a result of the parallel track of “education centres” in some states. These separate systems must be integrated to give all children access to schools of acceptable quality. This will require additional spending.

In a number of states, funds under various schemes (SSA, EGS and AIE) were used to create “Education Centres” (Shiksha Kendras) rather than proper schools. These typically involve “teachers” who are essentially local women who have just passed Class VIII (or even Class V in some cases) and are paid between Rs. 1000 to Rs. 3000 per month in the different states. They typically receive no training or a 2-week training at best, and may have to teach multi-grade classes often in single rooms. The proportion of children in such schools varies very widely, but the all–India average amounts to around 16 per cent of total enrolment in primary education, according to the Planning Commission. All such children are described in the official statistics as enrolled in schools, even though going to an Education Centre cannot be treated as school enrolment on par with the proper schools, and such instructors do not meet the required norms for teachers. Currently state governments allow these parallel (and deeply unequal) systems of schooling to continue to be run by different departments –
“proper schools” by the Education department, and education centres under the panchayats and therefore by the Panchayat Department. The need to integrate these two parallel systems must be explicitly recognized. This requires special budgetary allocations for upgradation and quality improvement of the Education Centres through better infrastructure, as well as intensive training of existing teachers and additional employment of adequate numbers of qualified teachers - all of which will have financial implications.

At the same time, planning for school education must take into account the ecology of education – the need to adjust school systems to agro-climatic and other local variations

This requires flexibility with respect to school timings, vacations, teacher recruitment – but without sacrificing quality. Norms for schools must recognize the possibility of regional and local differences as well as the particular requirements of certain communities, such as nomadic groups, tribal communities, short-term migrant households, etc.

1. School Management must be Decentralized as Far as Possible

Decentralization of the management of schools, combined with community participation, is the most effective instrument for ensuring accountability, improving the day-to-day functioning of schools and allowing for flexible responses to local requirements. Therefore, there should be devolution of authority to local levels, whether to panchayats, Village Education Committees or municipalities. School Management Committees that include representatives of all stakeholders, including parents and teachers, should be empowered to make many decisions. Social audits of schools should be supported and encouraged.

There is a multiplicity of management structures and government departments in the administration of school education. This creates confusion, unnecessary replication and possibly inconsistent strategies across different
schools. There must be greater co-ordination between different departments of
government on school education policy, even while ensuring more autonomy to
the local community in matters of day to day management of schools

Currently schools are run or funded and monitored not only by the central
and state governments, but also by different departments within state
governments – the Education Department, the Panchayat Department, the
Department for Tribal Welfare, the Department for Minority Welfare, etc. This
creates overlapping and conflicting structures of authority, an excess of
bureaucratic tangles, unnecessary replication of some activities (and even
replication of enrolment in some cases!), different guidelines and differential
standards for acceptable quality and other sorts of confusion. For example, in
the rural areas of several states, the local Panchayati Raj Institution (PRI) run
parallel to the SSA-run Village Education Committee (VEC). The exact remit of
each is not clear and the policy intentions of both become diluted in the process.
It is necessary to make systematic efforts to integrate or at least co-ordinate the
activities of these separate management structures. The precise roles and
responsibilities of each local level and state level department should be clearly
specified, but even more than that, there should be some sort of pressure for
these different bodies to work together as far as possible and provide a common
and equal schooling. Education policy must be part of the integrated framework
of decentralized planning. In the day-to-day management of schools, it is also
necessary to work towards segregating teachers from managers in the school
administration. At the same time, as noted above in point I.4, the
decentralization of authority is critical in improving and maintaining the quality
of education. Therefore, the local level management of schools, including
locally elected bodies, school boards, Village Education Committees, must be
allowed a significant degree of autonomy in handling matters relating to their
schools, including not only the exact allocation of funds, but also other matters
relating to school functioning and monitoring of teachers, etc.
There is need for a national body to monitor the quality of both government and private schools, to ensure that minimum standards are met in terms of learning outcomes.

Currently there is no systematic and continuous feedback on the actual impact and outcome of various educational schemes and initiatives, or the actual quality of education imparted in schools. There is a strong case for a testing body at the national level for quality assessment of schools. A results-based monitoring framework with due process indicators and outcome indicators needs to be evolved. This should be based on a short list of monitorable criteria. These should include fixed infrastructural requirements, enrolment and attendance, as well as outcome indicators such as learning levels achieved in certain basic areas such as language skills and numeracy, etc. Such a process of assessment needs to be applied to all schools – both public and private. However, the testing of students must not involve topics or questions that provide any incentives for rote learning.

The tracking mechanism should ideally be concerned with the profile of skill attainment of each student. Since school education is largely a state subject, but it is also important to achieve minimum schooling norms at the national level, the institutional framework for this could be at the national level with state subsidiaries. The role of this testing body will simply be to provide information on the results of its assessments, with the state governments free to act upon this information.

The results of such regular tests must be made publicly available in a format accessible to all, including websites. The monitoring of private schools, in terms of ensuring a transparent admissions process, regulation of fee structures, as well as meeting minimum set standards for quality of teaching and infrastructure, also requires attention. There is currently no exact data on the numbers and enrolment of unrecognized private schools in the country, their fee structure or admissions policy, or their standards of infrastructure and quality.
Private schools should become the subject of regulation and inspection within a set framework which is universally applicable.

2. The system of school inspection needs to be revamped and revitalized in most states, with a greater role for local stakeholders

The current inspection system is overburdened and inadequate, with a small number of inspectors required to cover a large number of schools, often spread over wide physical areas. The solution does not lie in simply expanding the system rather, we need to develop systems to ensure meaningful monitoring. We recommend that the strategy for the revitalization of the school inspection system should include the following:

- Local stakeholders should be involved in the monitoring of schools, whether in the form of village education committees, parent associations, or other such bodies.
- The number of inspectors needs to be increased in many states, and they must be provided
- The facilities to undertake their activities properly, such as transport, communications devices, etc.
- The inspectors themselves must be accountable to the stakeholders of the area, through appropriate checks and balances.
- The criteria for inspection, the dates on which inspection of particular schools has taken place and the results should be made publicly available, including by posting on websites.
- The monitoring and inspection of schools must be separated from school administration, as the two functions require completely different orientations.
- The criteria for inspection should include not only infrastructure, facilities and teacher presence but also minimum standards for quality.
3. The dignity of school teaching as a profession must be restored, and at the same time there should be transparent systems for ensuring accountability of school teachers

Teachers constitute the basic foundation of the school education system. However, there is a general decline in morale among school teachers, especially those in primary schools, and consequently it is no longer seen as an attractive profession for qualified young people. Two types of public perceptions, also propagated in the media and among officialdom, contribute to the low morale among school teachers: first, that anyone can teach and no particular pedagogical skills or training are required; second, that in any case most teachers do not work much and are frequently absent from school. While the latter may be the case for a relatively small minority of teachers, most school teachers are committed to their profession even if they have to function under very difficult conditions. However, they are also subject to many other pressures such as political pressure and obligations to perform non-teaching duties, which can prevent them from fulfilling their teaching duties adequately. It is essential to ensure that qualified teachers are hired and provided with the necessary incentives to enable them to work better. The professional status of teachers should not be diluted, and all drives at recruiting untrained teachers must be checked, although it is important to allow for flexibility in recruitment of teachers for specific subjects such as art, craft and livelihood skills. The use of para-teachers must be treated as a strictly transitional measure until proper schools are established. The imposition of a wide range of non-teaching duties, such as that of manning poll booths and collecting data for surveys etc., cuts into the available teaching time and also undermines the professional status of teachers.

These activities should be shared out among a wider range of public employees or even those hired specifically for the purpose, and the burden of such work on teachers must be reduced. Specifically, unemployed local youth
and recently retired people may be considered for such activities as far as possible. The recruitment of teachers from the locality has many advantages, as they can become accountable to the community, and have added stakes in improving the quality of education in their schools. In cases where local language or dialect is different from the state language, teachers familiar with the local language are likely to make better teachers.

At the very minimum, school teachers should be appointed to a particular location for a minimum fixed term of at least five years, since a major problem cited by many teachers in the government school system is that of frequent transfers. (The specific case of attracting teachers to remote and backward areas is considered below under Access.) There should be increased attempts to improve public recognition of the contribution of school teachers, through various incentives such as more local, state-level and national awards, etc. It is necessary to monitor the emoluments and working conditions of teachers in private schools, which vary substantially, and prevent exploitation of teachers by private school employers as far as possible.

However, in addition to improving the working conditions of teachers, it is also necessary to institute measures to provide greater accountability of school teachers not only to their superiors, but to students, parents and the local community. Currently, any mention of increasing teacher accountability is viewed with hostility and suspicion by teachers themselves. Such an outlook needs to be changed. There is clearly need for greater accountability of teachers to the community and the school, and this will be facilitated by greater decentralization of school management to local stakeholders as has been suggested above. This should be accompanied by recognition of the concerns of teachers and allowing them more space to be active in school management and school activities. The actual administrative arrangements whereby this is done should be left to be decided at the state and local level. Systems of self-evaluation and peer evaluation of teachers should be encouraged.
4. The training of school teachers is extremely inadequate and also poorly managed. Pre-service training needs to be improved and regulated, while systems for in-service training require expansion and major reform in all states

Both pre-service and in-service teacher training programs face major problems at present, at the national level and in almost all states. With respect to pre-service training, there is a proliferation of private colleges awarding the B. Ed. degree, and these are inadequately monitored or regulated. A significant proportion of those who receive B.Ed. degrees do so through correspondence or distance learning courses, which involve absolutely no practical exposure. In any case, classroom experience is underplayed in standard B. Ed. courses. At the same time, the employment of ad hoc teachers and those without even high school diplomas as teachers in the parallel stream perpetuates the notion that it is not necessary for school teachers to have systematic and prolonged pre-service training. In-service training shows problems of inadequate quantity, uneven quality, outdated syllabi, and poor management.

5. It is important to develop and nurture leadership for managing schools

Even talented individuals who could be suitable for the tasks of school management need to be trained for this purpose. Such capacity building would create a pool of potential principals or heads. There a several ways in which this can be done. State governments could assign such training to existing institutions such as SCERTs or SIEs, leveraging the expertise available in Navodaya Vidyalayas, Kendriya Vidyalayas, other government schools and private schools. Such training programmes, as well as retraining programmes for existing principals, could also seek the expertise of specialists in management education. Also, individual mentoring programmes for school leaders could be evolved.
6. **The possibility of greater exchange between schools, including mentoring of one school by another should be allowed and encouraged**

The current system creates many distinctions and prevents interaction between schools. There is need to constitute mechanisms of exchange and interaction between students and teachers of different schools. In addition, schools that wish to do so should be allowed to exercise the option of being ‘mentored’ by another school to improve facilities and teaching methods.

7. **Curriculum reform remains an important issue in almost all schools, school education must be made more relevant to the lives of children**

There is need to move away from rote-learning to understanding concepts, good comprehension and communication skills and learning how to access knowledge independently.

Successive commissions and committees set up by the government have emphasized the need to make the curriculum more interesting, relevant, creative and useful for students. The National Curriculum Framework 2005 also clearly articulated such an approach. Nevertheless it appears that in a majority of schools across the country, a significant emphasis on rote-learning and memorizing facts remains the norm. Also, there is evidence of children being overburdened with too much detail and an excess of scholastic requirements at the elementary level. It is important to orient students towards independent and continuous learning. This makes it essential to make greater efforts to change the attitude to learning and knowledge. It has been noted in several states that learning results have improved considerably upon providing inputs for communication and comprehension in language and basic mathematical skills using activity-based and imaginative pedagogical strategies.
8. Changes in the examination system are required, especially at board level but also earlier, to ensure that the pressure for rote-learning is reduced

The current over-emphasis on details, memorizing of facts and similar abilities rather than on understanding and accessing knowledge independently is reflected in the pattern of examinations. Board examinations in which marks are awarded based on the ability to recall lots of details or on rapidity of response or on the ability to do large numbers of sums in a limited period through practice in pattern recognition, are not sufficiently discriminatory and may end up providing misleading results. They also put pressure on schools to ensure that memory and pattern recognition skills are developed at the expense of genuine understanding.

9. New technologies, especially but not only ICT, should be used as much as possible to reduce costs, enable more effective use of resources, and provide wider exposure to students and teachers

The use of ICT as a teaching and learning device needs to be more firmly incorporated into the classroom. Both teachers and students need to be far more familiar with ICT, and get practical experience of web based research. Therefore ICT should be made more accessible to teachers, students and administration for learning, training, research, administration, management, monitoring, etc. This requires the provision of more facilities such as computers as well as connectivity and broadband facilities. Computer-aided learning also requires training of teachers and other staff in order to make the best use of the technology.

10. There is need for a web-based portal for teachers to exchange ideas, information and experiences

A forum for teachers needs to be developed where they may interact,
share experiences and ideas. This needs to be incorporated into teacher training programmes, and also provided generally for in-service teachers. A web-based teachers’ portal can play an important role as such a networking forum.

2.4.4 Access

Special strategies are required to ensure greater access to schools in backward regions, remote locations and difficult terrains.

There is a tremendous shortage of teachers and also great difficulty in ensuring minimum schooling infrastructure in some areas that have been historically deprived or have difficult topographical conditions. Distance and difficulty of physical access are important reasons for school dropout, especially in such areas. Sometimes it is also the case that such areas are inhabited by particular communities with their own language or dialect that is different from the state language. In order to ensure access to schools for children in such areas, special measures must be taken. NKC recommends the following measures for such areas:

1. Financial norms for schools in such locations must be different from those in more accessible areas, as they will require additional resource allocation based on particular conditions.

2. Special incentives, including a financial incentive (such as a “hardship bonus”) need to be provided for teachers to take up jobs in such areas. Two different models may be considered – one based on recruiting local teachers on a permanent basis for a job in a particular school without transfer; and another based on a transfer policy that divides locations into hard/middle/easy categories and allows teachers to rotate among them at specified intervals. Ideally, there should be at least one local teacher and one non-local teacher to ensure some variation, local acceptability and quality.

3. Residential arrangements must be made for teachers in such locations, by providing quarters next to or near the school. The cost of building such
quarters should be factored into the costs of the school building.

4. There are some geographical zones especially in mountainous regions, that are plagued by unique problems due to vast tracts of land, difficult topography, and a sparse and nomadic population. In such areas, well equipped residential schools should be set up instead of insisting on a school in every habitation. These schools must be equipped to look into the needs of very young children living away from their families.

A) Measures are required to ensure greater enrolment and retention of girl students:

The high dropout rate of girls especially from class V onwards is a matter of great concern. One major reason, as noted above, is the sheer lack of secondary schools nearby, as parents are reluctant to send girls to travel long distances to school. However, social conditioning and other constraints also play a role. Some policies to address this include:

- Special incentives for girls in secondary education where these are required (they are not required everywhere), in addition to free textbooks and uniforms, such as bicycles.
- Girls-only schools especially in particular areas.
- An enhanced scholarship scheme especially for girls, with particular emphasis on girls from socially deprived groups.
- The need for separate and functional toilets for girls in all schools, with access to water, is very important, especially but not exclusively in urban areas.

B) There is need to re-orient official strategies for ensuring better access of Muslim children to schooling:

Areas with Muslim majority population have tended to be overlooked in the implementation of government educational schemes. In addition, with a few
exceptions, there has been less private initiative in this regard. As a consequence, Muslims as a community, fewer government schools, girls schools, and higher educational institutions. It is important to rectify this gap and ensure adequate public expenditure to ensure that the physical and social infrastructure for schooling is made available. This means that the government should have a minority component in all its school development schemes and budget outlays, which should be in proportion to the minority population. The strategy cannot be based solely on more public resources provided to madrassas for their modernization, as according to the Sachar Committee Report, 96 per cent of Muslim children do not attend madrassas for schooling. Indeed, if the modernization of madrassa education is the only policy for increasing access for Muslim school children for a modernized education, it will only result in their being further isolated. It is important to ensure that children from all minorities and socially deprived groups are not discriminated against in the process of attending school. This must be an active and concerted campaign, in which syllabi and curriculum are checked to avoid prejudice, teachers are sensitized and instances of discrimination are punished. This also requires grievance redressal mechanisms at the school level and also at higher levels.

C) The access of children from scheduled tribes requires more flexible and sensitive schooling strategies:

Tribal children face problems of inadequate geographical access, discrimination at school and issues of language, which have been discussed earlier but are especially relevant in these cases. Tribal students have to compete with SC students, often at a disadvantage to the former. All of these must be addressed at the local level as well as at the district and state level. Every state should have an education policy for tribal and minority education, with a long term vision of eventual integration into the mainstream. Rather than setting up separate schools for those who have dropped out because they felt discriminated
against, teachers should be better sensitized to the needs of students from such communities, as well as the particular needs of first generation learners. The issue of language is particularly important in areas with tribal population, and care must be taken to find and train teachers who can deal with children in their own language, rather than forcing them to adjust to the regional language.

D) Education of SC children must be a priority, but with the required flexibility and avoidance of discrimination:

The points made earlier with respect to discrimination are especially valid also for SC children, and must be addressed in similar ways. In addition, scholarships should be increased and provided to much larger numbers of Dalit children, along with other provisions such as free textbooks up to class X and other incentives.

E) Children of seasonal migrants require special conditions and efforts to ensure continuous access to schooling:

Seasonal and short-term migration is a major cause for early drop outs and non enrolment. In order to ensure that such children have access to a quality and complete education, their economic insecurity has to be taken into account while formulating educational schemes. Tent schools and mobile schools must be made a part of the urban landscape for migrant children, while rural school also have to be made aware of the need to admit migrant children. This requires a significant change in the way that school admissions and enrolment are carried out, as well as greater sensitivity, flexibility and effort on the part of the school administration, all of which require hard and soft resources. It is necessary to identify good practices in this regard which can serve as a model to be emulated elsewhere.

F) Labouring children require incentives and bridge courses:

Some sort of monetary stipend may have to be paid to labouring children
to bring them into schools. In addition, synergies must be created with NREGA to look into school education concerns of labouring children. Pre-school systems like balwadis and anganwadis must be strengthened, so that a school going habit can be ingrained, as well as providing a space for small children to be cared for, while their elder siblings may go to school. Alternative Centres for Education must be utilized specifically to provide bridge courses aimed at different age groups and classes for drop outs. However, the use of Alternative Centres for Education must be no more than in a transition capacity. AIE should not become the only option for access to poor school children for a school education. Study Centres must be provided for first generation learners and seasonal migrants as a space which is more conducive to learning than what may be available at home. These may also be used as community centres, libraries, etc.

G) The needs of physically disadvantaged children, as well as teachers, have to be factored in more thoroughly in provisions for school education:

The goal in all schools should be inclusive education, which means that all systems must be oriented to allow the greatest possible access to children with different needs and abilities. This requires substantial changes in both infrastructure and pedagogical methods. School buildings must have provisions for access and navigation for the visually impaired, the physically handicapped, etc. Teacher must be trained, sensitized and empowered to deal with children with different abilities in the classroom situation. While this is the ultimate goal, it must also be recognized that current schooling patterns are not always conducive to bringing out the full potential of physically disadvantaged children, and that therefore there is still a case for special schools. There is a perception that government mechanisms may not be best suited to provide sustained and sympathetic support for learners with special needs and severely
disabled children (such as the blind). In this context, it may be better to identify appropriate and willing institutions outside the government who may become partners.

H) Language issues must be explicitly taken on board in designing school curricula and methods of pedagogy

Language has been found to be a highly alienating factor in the education of many school children, particularly amongst minorities, tribal communities with languages without a script, as well as linguistic minorities in most states. Many children resent the imposition of the state language as the medium of instruction, or as second language in school. More teachers for teaching minority languages must be appointed in government schools to increase intake of children from minority language communities. Qualified teachers from the local community and therefore speaking the same language must be recruited on a larger scale, as a means of encouraging retention amongst those who feel marginalized, as well as a means of bringing greater community control in the school. This would also act as a boost to confidence, and provide role models to students from disadvantaged backgrounds.

The teaching of English should be introduced along with the first language, starting from class I in school. Proficiency in English is widely perceived as an important avenue for employment and upward mobility, which also greatly facilitates the pursuit of higher education. The incorporation of English into the curriculum, through the introduction of English as a language in class I and the teaching of one other subject in English medium in later classes, requires pedagogical changes to contextualize language learning, increasing the availability of English language teachers and those who can teach at least one subject in English, as well as bilingual and supplementary teaching materials. At the same time, school education must commit to promoting multilinguality, given the multilingual nature of our country.
2.5 Indian Parliamentary and Scientific Committee Report, 1961
(Publications Division, Delhi, 1964)

Main Recommendations:

1. Science education in the primary schools should be introduced in the form of nature study. Not less than 25% of the lessons in the different languages readers could be devoted to science subjects in the form of stories, explaining the phenomena in nature as well as the lives of great scientists who have contributed to the making of the modern world. Such lessons should not, however, lack in literary presentation and grace to stimulate creative talent of the pupil. Use of visual aids, visits to botanical and zoological gardens and other methods of instructions have to be employed as far as feasible. Besides, in the reorganisation of syllabus for primary schools some science teaching has to be introduced in an elementary form.

2. General Science courses could be started in the middle schools, i.e. classes VI, VII and VIII.

3. At the high school stage science should be compulsory for all students, but it has to take the form of separate subjects as Mathematics, Physics, Chemistry, Biological Sciences, etc. along with the other humanistic subjects. Certain guidance in this connection could be offered by the way in which courses have been prescribed in the U. S. S. R. While formulating the courses it should be seen that there is a balance between the courses in science and courses in humanistic subjects and the one does not outweigh the other. This should remove defects of early specialisation. Everyone who leaves the this School should be equipped with elements of science as well as of humanistic culture. Whether he goes into employment or further courses in higher education or junior colleges instruction or in courses of vocational education in the trade schools, polytechnics or various other
branches of vocational training which will expand as our economy progresses.

4. A decision will have to be taken regarding the nature of the higher secondary stage. If the trend is to follow the recommendations of the Sampurnanand Committee, it will be possible to have new institution of junior colleges or intermediate colleges attached to the colleges or high schools or independent with a 2-year curriculum consisting of the 11th and 12th classes. In that case, specialisation in science could be started at this stage for those students who would go in for professional courses of medicine, agriculture, engineering or degree courses like B. Sc. and M. Sc. in science itself. The courses will have to be, perhaps, of the same nature as adopted for the VI form in U. K. where boys spend at least 2 years, but very often 3 years in doing courses at advances level for admission to the universities and other institutions of higher training.

5. Specialisation at an early stage of school education should be avoided and courses of instruction should be so framed as to enable those who come out of the high school at the age of 16 plus or 17 after completing 10 years of schooling either to pursue an occupation or train.

In 1961 recommendations on science education was very significant. Reports regarding laboratory and equipments revealed the following facts for improvement of science education:

1. Functional environments for science education.
2. Laboratory and equipment for facilitating science education.
3. Details infrastructural environments for laboratories.
4. Socio-economic condition to be considered for improving practical laboratories.
5. Details about size, shape and other conditions to maintain a good laboratory.
2.5.1 Report on Science Laboratories and Equipment in Higher Secondary Schools in 1962 by Panel Committee on Plan Projects, New Delhi, 1961

Main Recommendations:

1. Since the main function of a laboratory is to impart scientific education in an efficient way, its design should, therefore, be based on functional requirements.

2. The Panel considers that in the interest of economical distribution of lay-out and services, it would be advisable to locate the laboratories for Chemistry and Home Science on the ground floor and those for Physics and Biology on the first floor over these laboratories if the school buildings have a double-storied structure. For a single-storied structure, the grouping of Home Science with Chemistry and of Biology with Physics may still be kept intact. Both Chemistry and Home Science laboratories require special lay-outs for water and drainage which will be best arranged if they are both on the ground floor and adjacent to each other.

3. The Panel is of the view that all the four laboratories, viz. Physics, Chemistry, Biology and Home Science could be of the same size, i.e. 10.0 m × 6.0 m = 60 sq. m. (32' × 20' – 640 sq. ft.) with a space of 6.0 m = 60 m × 3.7 m = 22.2 sq. m. (20' x 12' – 240 sq. ft.) provided for ancillaries for each laboratory. The Panel feels that the space requirement of 60 sq. m. for a batch of 24 students is the minimum that could be recommended for each laboratory.

4. The factor of light, apart from affecting visual and physical comfort of students, involves the question of economy also in respect of the size and type of windows and of the disposition of light fittings. The chief purpose of lighting is to provide comfortable visual observation for laboratory work
and the conservation of vision of the young workers. It is desirable to make maximum use of day-light by proper location of doors, windows and skylights. Windows are best placed at a standard height of 1.2 m (4 ft.) from the finished floor level, as this would give a good distribution of light over the work tables whose height may vary between 85 cm. and 90 cm. (2'-9" and 3'). To save on capital as well as recurring expenses artificial lighting needs to be provided only for occasional work. Windows and doors should be so disposed as to provide as evenly distributed illumination as possible. A window area of 20 per cent of the floor area is considered to be adequate for general laboratory work. In terms of lumens per sq. ft. is considered to be adequate. The following reflectance standards are recommended for obtaining a desirable brightness level inside the laboratories:

- Ceilings — 85% of the total amount of light received by the surface.
- Walls — 60% of the total amount of light received by the surface.
- Floors — 15% to 30% of the total amount of light received by the surface.

5. Light and colour are closely inter-related so that in determining a suitable colour scheme inside the laboratory, the reflectance value should always be taken into account. White is not considered suitable for laboratory walls as it causes glare and shows dirt very prominently. Light cream or silver grey be preferable.

6. Work table is the most important item of laboratory furniture and needs careful consideration. The Panel, after careful consideration of the functional requirements, makes the following recommendations:

a) Size of the work table need not be the same for all the four laboratories since the work carried out differs in each case.

b) Work tables in the Physics, Chemistry and Home Science laboratories need not have drawers or closed cupboards. Biology tables, however,
may preferably be provided with drawers. In Physics laboratory the work tables may me provided with 2 ft. wide intermediate shelves about 1 ft. above the floor level.

c) Provision for tables should be made for 24 students in each laboratory.

7. The committee strongly recommended that accommodation such as storage and balance room must form an essential part of the laboratory itself and should be well-planned in the same manner as the laboratory.

8. The panel feels that laying down of specifications and standards for equipment and apparatus will greatly improve the quality of instruments at present being supplied to schools and recommends that the necessity for making these specifications may be brought to the notice of the Indian Standard Institution and the Central Scientific Organisation with the request that they may expedite the laying down of standards of at least those items of science apparatus which are already being manufactured in the country.

9. The panel made a detailed study of the cost involved in equipping the various laboratories and recommended that the procurement of equipment and apparatus for a school which was to introduce science subjects afresh may be spread over a period of three to four years. In the case of a school which is already imparting instruction in these subjects, the requirements will vary with reference to the available equipment and need for future development within the limits of the panel’s list.

2.6 Examination Committee Report, 1957 (U. G. C., New Delhi)

Summary of Recommendations:

1. No reform in the system of examinations will reduce the failure rate in our universities and colleges, unless the prevailing admission procedures are improved. We have therefore, to see that only those candidates are admitted
to universities who can profit by higher education. One of the feasible ways by which this could be done is to introduce in the School Leaving Examination two additional papers, one to test competence in the use of the language of the university and one to test intellectual maturity, for those who wish to enter the university.

2. Teaching work should be done not only through lectures but through tutorials, seminars, etc. It will be desirable to hold periodical short tests on the work done in the tutorials and to maintain a record of the assessments made. This should be regularly evaluated. Each university may decide what weightage should be given to this. In order to make room for tutorials, lectures may be cut down (it should be possible to reduce them by 50 per cent) and the teaching work divided between tutorials and lectures.

3. The U. G. C. should encourage seminars, discussions and conferences of university and college teachers for defining the objectives of teaching and examinations in different subjects at various levels. A clear conception of the aims of teaching will facilitate good teaching and bring about a greater conformity between examinations and teaching.

4. Research should be undertaken in regard to both the educational and technical aspects of examinations. Topics which may be taken up for research in this connection are indicated in the report. It should be possible for the departments of education in universities to undertake such work as a part of their normal activities. Perhaps the newly created National Council of Educational Research and Training would also be able to assist in this. There should be arrangement in the University Grants Commission to coordinate the research work of the different universities and to disseminate information and conclusions with regard to the studies undertaken.

In 1970's the examination situation was not proper. Some malpractices were reported in different parts of India, where West Bengal, was also not an exception. But in 2005–2006 the overall situation changed and it was almost fair. The present researcher, though not interested about the examination situations of the hall, but simultaneously it can not be avoided because in secondary schools in West Bengal, evaluation technique is based on summative approach where examination environment and other technical factors are quiet important.

Summary of Recommendations:

1. Legislation:

   The State and Central Governments should immediately take suitable measures to get amending legislation passed in the relevant laws pertaining to the following matters:
   a) Empowering the Board / University to grant autonomous status to well established institutions.
   b) Empowering the examining authorities to check students and prohibit those with weapons from entering the examination halls.
   c) Making the assembly of persons within a certain distance from an examination hall a cognisable offence.
   d) Making the indulgence in malpractices by employees and authorities of the universities / boards a cognisable offence.
   e) Empowering the examining authorities to take out insurance for the invigilators and examiners.
   f) Making the assault on an examiner or an invigilator or other person connected with examination, a cognisable offence.
2. Conduct of Examination:

a) Paper-setters should be appointed at least six months prior to the commencement of a Public Examination and they should be given at least eight weeks to draft questions. The papers should be finalised at a meeting of the paper-setters.

b) Where the number of candidates in Public Examination is very large, there should be decentralisation with separate examination for each group of 10,000 school students or 1,000 college students.

c) A Public Examination should be conducted in the institution in which the students study. The majority of the invigilators and superintendents should be drawn from the institution concerned.

d) Admission to the centre of a Public Examination should be through one main entrance. Only bonafide candidates with identity cards should be admitted in the examination centre after thorough checking.

e) Model answers should always be prepared and supplied by the paper-setters.

f) Copies of the question papers set should be made available to the teachers in the schools and colleges on the day of the examination but after it is over, so that the teachers could comment on the paper to the authorities quickly.

g) The method of spot evaluation at a central place to which all the examiners are called, should be adopted.

h) The result should be declared subject-wise and furnished in the form of grades. The 'raw' marks given on the candidates passing in the minimum number of subjects.

i) The certificate issues by an examining authority should have two columns, viz. one giving the result of Public Examination and the other giving the result of the internal assessment by the teachers.

j) For the awarding of prizes and scholarships to a candidate who stands first in an examination or in a subject, a separate test should be conducted and admission to the same limited to those who secure the highest grade in the
Public Examination.

k) There should not be too many Public Examinations. There should be one at the end of the upper primary / middle school stage, another at the end of the secondary stage and the third at the first degree stage. All others should be internal assessments only.

3. Use of Examination Results:

a) A recruitment to the services should be made on the basis of tests / examinations conducted by the Public Service Commissions and the maximum age for appointment for clerical posts be reduced to 19 years.

b) Admission to colleges including professional colleges should be on the basis of an entrance test conducted specifically for assessing the aptitude of a student for a particular course. Eligibility to appear at these tests should alone be determined by the results of the Public Examination.

4. Budgeting for Education:

In future, both the Central and State Governments should make funds separately for guidance and studies and research on examinations.

5. Research:

There should be continued study and research on examinations, both at the State and Central levels and in the boards / universities in a coordinated manner. Necessary funds for the same should be provided on a priority basis.

6. Novel Ideas:

Novel ideas for the organisation and conduct of Public Examinations should be encouraged.

Main Recommendations:

1. The committee has estimated that Rs. 90 crores will be required for the additional buildings for the primary and secondary schools started during the Fourth Plan. The Committee has also estimated that Rs. 250 crores will be required for clearing the backlog of school buildings required for primary and secondary schools started before the commencement of the Fourth Plan. The Committee has assumed that 50 per cent of the amount required for the construction of school buildings will be available through popular contribution. The Committee urge the Government of India to set apart Rs. 10 crores per annum for the next ten years as grants to the State Governments specifically for construction of school buildings. If necessary, half of this amount may be given as loan and the rest as grant.

2. In order to mobilise local resources for school buildings, the following steps are recommended:
   i) The committee strongly recommends that the funds collected by the different States through lotteries may be utilised for educational purposes including the capital costs on burning the sale of the lottery tickets.
   ii) Local people may be asked to donate one or two rooms at the time of birthdays, marriages and such other occasions and if so desired, the name of the donor could be inscribed on the room / rooms donated by him / her.
   iii) Public meetings may be arranged and an appeal could be made by a number of speakers for donations for the construction of school buildings.
   iv) A drive should be made to get the religious institutions to donate some buildings as a part of their programme.
   v) Other avenues like staging plays and organising exhibitions may also be explored for the purpose of raising funds for school buildings.
vi) Contributions in kind, e.g. surplus cement and surplus food for paying for the labour in kind may also be accepted.

3. The Committee recommends that the programme of construction of school buildings may be planned in the following order of priorities:

(i) Buildings for those schools where classes are held in the open (Information received from States/Union Territories at Annexure X);
(ii) Places where classes are conducted in tents;
(iii) Schools having rented accommodation;
(iv) Repairs, maintenance and improvements (additional rooms, etc.) in existing schools.

The possibility of providing tents to schools where classes are being held in the open till buildings can be provided should also be explored.

Though the examination committee report on 1957 was for higher education appointed by U. G. C. but some recommendations may be fruitful on secondary level also. Specially the formative approach in evaluation system may be introduced in the present secondary level to upgrade the present system.

2.9 Curriculum Studies and Examination System

Curriculum analysis or studies is necessary by virtue of its centrality to two important tasks performed by teachers and administrators: curriculum selection and curriculum adaptation. When selecting or adapting a curriculum for use in a particular classroom, school or school systems, it is important to determine whether or not it is appropriate for the situation. This determination is not limited to an analysis of such matters as the reading difficulty, the quality and accuracy of content, and the amount of additional training required for implementation. This scanning also requires the ability to determine the extent to which the assumptions underlying the curriculum are valid for the particular class remaining in the existing school set ups. These assumptions consist of tacit
beliefs about the central purpose of education, about the intended audience (students, teachers, parents etc.) and the way the people learn, about the teachers and the best ways to teach, about the subject matter and how it should be organized, and about the community and what it values; or about to what extent it will be feasible in the school setting for all types of learners of differing ability and cultural tools of learning. Posner thinks that an understanding of these sort of these sorts of beliefs is at the heart of reflective eclectism. Uncovering these sorts of beliefs requires probing beneath the surface of the document of the curriculum framework, reading between lines and making inferences on the basis of scattered evidence and reflection. Thus curriculum studies or analysis is more like a detective work or intellective discourse than clerical work. Once you learn how to do a thorough and complete work, you will have internalized a basic sense of the enterprise and even some of the steps.

Curriculum studies may be looked as one kind of content analysis of the curriculum documents and therefore, you will have to put into actions and steps required in content analysis as a kind of methodology of research.

Finally, with these sorts of activities, thinking, orientations, techniques, etc. when you will be able to internalized, you will be an active team member of a curriculum group.

2.9.1 Curriculum Studies / Analysis Questions

On the basis of the above mentioned discussion we may now think of a tool that may be useful for a novice student who intents to perform curriculum studies. This tool or inventory has been devised by George J. Posner in context of curriculum analysis. However, it will be equally useful here:

1. **How is the curriculum / curriculum framework documented ?**
   - On what documents and other resources will you base your study and analysis ?
   - What limitations in document do you find ?
2. What situation resulted in the development of the curriculum?
   - To which social, political, or educational problems was the curriculum attempting to respond?
   - What planning elements dominated the curriculum development process?
   - What theory, or model is the pillar of development of the curriculum?

3. What perspectives do the curriculum represent?

4. What are the purposes and content of the curriculum?
   - At what does the curriculum expresses its purpose?
   - What educational goals, educational aims and educational objectives are emphasized and what are their relative priorities?
   - What learning objectives are included and emphasized in the curriculum?
   - What is the main nature of content organization in the curriculum?
   - What are the primary ways in which the curriculum represents the subject matters in the students?

5. What assumptions underlie the curriculum approach to purpose or content?
   - What conceptions of learning, objectives, curriculum and teaching underlie the materials you are analyzing?
   - What aspects of a hidden curriculum are likely to accompany the conceptions and perspectives underlying the curriculum?

6. How is the curriculum organized?
   - What organizational principles are employed?
   - What provision is made for micro-level vertical / or horizontal organization?

7. What assumptions underlie the curriculum organization?
   - What epistemological assumptions underlie the curriculum’s organization?
• What psychological assumptions underlie the curriculum’s organization?
• What other assumptions underlie the curriculum’s organization?
• What assumptions underlie modifications of curriculum with respect to textbooks, media use, learning climate and teacher training?

8. How shall the curriculum be implemented?
• What are the temporal, physical, organizational and political – legal requirements of the curriculum?
• What are the portable costs and benefits associated with the curriculum change / renewal?
• To what extent will the curriculum be consistent with and appropriate for the teacher’s attitudes, beliefs and competencies?
• What values are embedded in the curriculum, and how well are these values likely to be suited to the curriculum?

9. What is your judgment about the curriculum?
• What are its strengths and weaknesses?
• Of what dangers would you want to be careful if you implement it?
• Of what changes would you want to be looked forward?

2.9.2 Common Elements of a Curriculum Framework:

A curriculum framework refers to a broad map of a curriculum which presents the curriculum work in precise way but does not generally explicitly the all ramifications of the learning tasks to be operated when it will be implemented in the real world of classroom. Every curriculum framework is expected to exhibit some essential elements in the framework documentation.

1. Introduction – Current Context:

It provides a rationale of the curriculum framework.
2. Educational Policy:

It provides a conceptual support of the Government's policy on education, inclusion of ICT, meeting the challenges of global trends, development of skills, improving the universal literacy and to create a productive knowledge society.

3. Learning Objectives:

Describes what students know and be able to do when they complete their curricula. Outcomes should be expressed in different domains, including knowledge, understanding, skills, and competencies, values and attitudes.

4. Structure of the Education System:

Describes the school system within which the curriculum framework is to be applied:

- Number of schooling including compulsory schooling. Stages of schooling and their durations.
- Number of weeks in the school years and hours or teaching periods in the school week.

5. Structures of Curriculum Content, Learning Area and Subjects:

Describes the organization of content within the framework and the extent to which schools and students can make choices.

- The pattern of subjects or learning areas to be studied in each stage or cycle such as core, elective and optional subjects.
- A brief description of each subject or learning areas outlining the rationale for inclusion in the curriculum and the contribution to the achievement of learning outcomes.

6. Standard of Resources required for implementation:

Teacher's qualification, Teaching load. Students-involvement and activities Materials-textbooks, computers, other equipment, facilities in classroom.
7. **Teaching Methodology**:

Description in the range of teaching approaches that might be employed in the implementation of the framework.

8. **Assessing Student Achievement**:

Describing the importance of assessing the extent to which students achieve the outcomes of each subject, and recommends types of assessment strategies such as written, oral, performance, and practical or dissertations.

2.9.3 **National Curriculum Framework – 2005 by NCERT**

Plan and pay attention to systemic matters that will enable us to implement many of the good ideas that have already been articulated in the past. Paramount among these are:

- Connecting knowledge to life outside the school,
- Ensuring that learning is shifted away from rote methods,
- Enriching the curriculum to provide for overall development of children rather than remain textbook centric,
- Making examinations more flexible and integrated with classroom life and,
- Nurturing an identity soaked in caring concerns within the democratic polity of the country.

In the present context there are new developments and concerns to which our curriculum must respond. The foremost among these is the importance of including and retaining all children in school, through a programme which reaffirms the value of each child and enables all children to experience dignity and the confidence to learn. Curriculum design must reflect the commitment to Universal Elementary Education (UEE), not only in representing cultural diversity, but also by ensuring that children from different social and economic backgrounds with variation in physical, psychological and intellectual characteristics are able to learn and achieve success in school.
A) Quality Dimension – Centrality of Renewal:

Quality is the first and the last mantra of the national curriculum framework. The late J. P. Naik had described equality, quality and quantity as the ‘elusive triangle’ of Indian education. Moreover, UNESCO’s recently published global monitoring report discusses systematic standards as the appropriate context of the quality debate. Physical resources by themselves cannot be regarded as an indicator of quality; yet, the extreme and chronic shortage of physical resources, including basic infrastructural amenities, in school run by the state or local bodies does present a serious quality constraint. The availability of qualified and motivated teachers who perceive teaching as a career option applies to all sectors of schools as a necessary precondition for quality. Suggestions for the dilutions of standards in teacher recruitment, training and service conditions articulated in the NPE and, before it, by the Chattopadhyaya Commission (1984) arouse anxiety and commented that no system of education can rise above the quality of its teachers, and the quality of teachers greatly depends on the means deployed for selection, procedures used for training, and the strategies adopted for ensuring accountability.

The quality dimension also needs to be examined from the point of view of the experiences designed for the child in terms of knowledge and skills. Assumptions about the nature of knowledge and the child’s own nature shape the school ethos and the approaches used by those who prepare the syllabi and textbooks, and by teachers.

No subject in the school curriculum can stay aloof from these larger concern, and therefore, the selection of knowledge proposed to be included in each subject area requires careful examination in terms of socio-economic and cultural conditions and goals. The greatest national challenge for education is to strengthen our participatory democracy and the values enshrined in the Constitution. Meeting this challenge implies that we make quality and social justice the central theme of curricular reform. Citizenship training has been an
important aspect of formal education. A clear orientation towards values associated with peace and harmonious co-existence is called for. Quality in education a concern for quality of life in all its dimensions.

B) Learning and Knowledge – Curriculum:

The formal processes of learning that school makes possible can open up new possibilities for understanding and relating to the world. The curriculum framework advocates for child-centered pedagogy. ‘Child-centered’ pedagogy means giving primacy to children’s experiences, their voices, and their active participation. This kind of pedagogy requires us to plan learning in keeping with children’s psychological development and interests. The learning plans therefore must respond to physical, cultural and social preferences within the wide diversity of characteristics and needs. Our school pedagogic practices, learning tasks, and the texts we create for learners, tend to focus on the socialization of children and on the ‘receptive’ features of children’s learning. Learning is active and social in its character. Children’s voices and experiences do not find expression in the classroom – often in our existing classroom. Hence the children will learn only in an atmosphere where they feel they are valued. Our schools still do not convey this to all children. The association of learning with fear, discipline and stress, rather than enjoyment and satisfaction is detrimental to learning.

The framework has pointed out the Common sources of physical discomfort which include – long walks for young children to reach school.

Heavy school bags; time-tables that do not give young children enough breaks to stretch, move and play, and deprives older children of play/sports time, and encourage girls to opt out.

The curriculum must have a holistic approach to learning and development that is able to give them active participation in learning.
C) Development and Learning:

As children’s metacognitive capabilities develop, they become more aware of their own beliefs and capable of regulating their own learning. Further as active learners:

- All children are naturally motivated to learn and are capable of learning.
- Making meaning and developing the capacity for abstract thinking, reflection and work are the most important aspects of learning.
- Children learn in a variety of ways – through experience, making and doing things, experimentation, reading, discussion, asking, listening, thinking and reflecting, and expressing oneself in speech, movement or writing – both individually and with others. They require opportunities of all of these kinds of their development.
- Teaching something before the child is cognitively ready takes away from learning it at a later stage. Children may ‘remember’ many facts but they may not undersigned them or be able to related them in the world around them.
- Learning takes place both within school and outside school. Learning is enriched if the two areas interact with each other. Art and work provide opportunities for holistic learning that is rich in tacit and aesthetic components. Such experiences are essential for linguistically known things, especially in moral and ethical matters, to be learnt through direct experience, and integrated into life.
- Learning must be paced so that it allows learners to engage with concept and deepen understanding, rather than remembering only to forget after examination.
- Learning can take place with or without mediation. In this case the latter, the social context and interactions, especially with those who are capable, provide avenues for learners to work at cognitive levels above
D) Teaching for Construction of Knowledge:

In constructivist perspective learning is a process of construction of knowledge. A child constructs her / his knowledge while engaged in the process of learning. Quite often children have an idea arising from their everyday active engagement and learning various concepts, skills and positions through the process. Very often teachers, in government as well as private schools, insist that all children must give identical answers to questions. We must indeed, contemplate why we only ask children to give answers to questions.

Constructivist Learning Situation Process involves basically two elements – Interpretation construction and Multiple interpretation.

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

Much of our school learning is still individual based (although not individualised!). The teacher is seen as transmitting ‘knowledge’ which is usually confused with information to children, and organising experiences in order to help children learn. Learning in the company of others is a process of interacting with each other and also through the learning task on hand. This kind of learning gets enriched when schools enroll children from different socio-economic backgrounds.

There are ways in which group learning can be assessed and evaluated. Schools could also consider giving mixed age groups of children projects to do together. In such mixed groups there is much that children can learn from each other such as team work and social values. Group learning tasks, taking responsibility, and contributing to a task on hand are all important facets of not only acquiring knowledge but also in learning of crafts and arts.
E) Designing Learning Experiences:

The quality of the learning task influences its learnability and its value for the learner. Learners accept being controlled and learn to want to control. Answer, we need to allow learners to spend time on deeper meaningful learning. Learning tasks are to be designed to ensure that children will be encouraged to seek our knowledge from sites other than the textbook.

This framework misses to spell out clearly the criteria for selecting learning experiences and their length and breadth as usually found in technical approach to curriculum development and design. In this aspect the framework seems non-technical.

F) Approaches to Planning:

Learning must be focused on activity. The learning experiences should be organized as:

- Observing something happen.
- Participating in an exercise involving body and mind such as planning a role around a theme and presenting it.
- Talking about and reflecting on something the child has experience.
- Making something, say, a system of gear wheel or trying out an experiment in a lift.
- After the experience, the teacher could organize a discussion, an exercise involving, writing, drawing and display, etc.

2.9.4 Knowledge and Understanding: Basic Capabilities of Learners

The curriculum needs to provide experiences that build the knowledge-base through a progressive introduction to the capabilities of thinking rationally, to understand the world through the disciplines, aesthetic appreciation, and sensitivity to others, to work and to participate in economic processes. This section discusses the nature and forms of knowledge and understanding as
necessary for making informed curricular choices and approaches to content.

Knowledge can be conceived as organised, through language, into patterns of thought (or structures of concepts), thus creating meaning, which in turn helps understand the world we live in. It can also be conceived of as patterns of activity, or physical dexterity with thought, contributing to acting in the world, creating and making of things. Human beings, over time, have evolved both a wealth of bodies of knowledge which includes a repertoire of ways of thinking, of feeling and of doing things and constructing more knowledge. It suggests that in the curriculum, there must be as much focus on the process of learning, on how learners engage with and reconstruct knowledge, as on the content of what is learnt.

**Forms of Understanding:**

Knowledge can be categorized based on distinct kinds of concepts and meanings involved and processes of validation and justification. Mathematics has its own distinctive concepts, such as prime number, square root, fraction, integral and function. The validation procedures of mathematics are never empirical, never based on observation of the world or on experiment, but are demonstrations, internal to the system specified by the appropriate set of axioms and definitions.

Scientific inquiry involves observation and experimentation to validate predictions made by theory (hypotheses), which may be aided by instruments and controls. Social Sciences and Humanities have their own concepts, for example community, modernization, culture, identity, and polity. Social Sciences aim at developing a generalized and critical understanding of human beings and human groups in society. The Social Sciences concern themselves with description, explanation and prediction in the social world. With regard to the process of knowledge formation, Science and Social Sciences are first, the Social Sciences study human behavior which is governed by ‘reasons’, while
the nature is governed by ‘cause-effect’. Second, findings of Social Sciences often raise issues of ethics and desirability while natural phenomena can be understood, raising ethical questions only when they enter into the domain of human action.

Art and aesthetics use quite familiar words, such as rhythm, harmony, expression. Art productions cannot be judged against reality or for ‘truth’. Ethics is concerned with all human values, and with the rules, principles, and standards.

In relation to action and choice, therefore, ethics must be conceded primacy over each of the forms of understanding. Furthermore, such reasons will be reasons for anyone; reason, equality and personal autonomy are therefore very intimately connected concepts.

Philosophy involves a concern on the one hand, with analytical clarification, evaluation and synthetic coordination of the aforementioned forms of understanding.

The basic capabilities, the knowledge of practice and the forms of understanding are the core ways in which human experience has been elaborated in the course of history. Imagination and critical thinking are linked in obvious ways with the development of understanding and reason, and so are the emotions.

Thus, the curriculum planners have reflected on cognitive constructivism, social constructivism, learning in situ, moral reasoning, metacognitive elaboration of one’s thought processes, problem-posing learning, collaborative learning, etc. and imagined to bring the appropriate exercise by the teachers in classroom learning.