Vision 2020 - Education

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Prompted by the Prime Minister's vision for India's development as Knowledge Society, the Planning Commission constituted a Vision 2020 Group to look into the various parameters of knowledge society which relate to knowledge as a base to create values to be shared through global networking. NCERT was assigned the task to develop the educational aspect of Vision 2020.

The paper defines Knowledge Society as a society where caring, sharing and using knowledge are key factors promoting prosperity and well being of the people.

The paper has three sections, the first relates to Knowledge Society and its various parameters, the second looks at knowledge *per se* from Indian point of view and the third section presents Vision Statement, specific themes and strategies to achieve educational vision.

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Vision 2020 – Education

Section –1

Vision building is a challenging exercise as it aims to construct future scenarios and link the present with the future. It is true that without vision, cultures, communities and civilisations perish. The exercise of vision building can neither be done by only re-structuring the present realities nor by sheer dreaming. Vision, dreams and future expectations must merge into contemporary realities. Visions can be realised and transformed into realities by understanding, initiative, commitment and hard work and dreams can be transformed into realities if full trust is put in self, society and the nature . Envisioning is a part of an individual's planning activities as also that of a nation. Nations, big or small, developed or developing, all conceive and construct future visions and prepare strategies to achieve them.

Vision is not to be seen either as a long term planning exercise or as a road map. In both these cases there is something given, something existing which forms the base. On the other hand future aspiration generates vision and that stirs us to action. Through the eye of creative imagination the vision builder places ought in the context of is and develops a constructive picture about the present. Unlike activities involved in annual planning wherein the present shapes the future, the activities in vision building are guided by the future to shape the present. Thus the construction of vision is a type of dreaming rooted in the contemporary contextual social realities. With respect to education, this exercise is being attempted here under three sections, the first relates to Knowledge society which for, our purpose means a society where caring, sharing and using of knowledge are key factors promoting prosperity and well being of the people, the second section relates to knowledge as seen from the institution perspective and the third presents vision statement themes and strategies to achieve them.

In the last decade India has seen a revolution in knowledge and information sectors. It has gained a special position in the comity of information communication technology oriented nations. It would thus be advisable to give some space here to the term "knowledge society".

The term ‘Knowledge society’, ‘Information Society’ and ‘Learning Society’ have now become familiar expressions in the educational parlance communicating emerging global trends with far-reaching implications for growth and development of any society. These are not to be seen as mere cliché or fads but words that are pregnant with unimaginable potentialities. Information revolution, information technologies and knowledge industries, constitute important dimensions of an information society and contribute effectively to the growth of a knowledge society.

The term “Knowledge Industry” was coined by Princeton Economist Friz Machlup in his book, ‘Production and distribution of Knowledge’ in 1962. The term ‘knowledge society’ has been used by Peter F. Drucker (1971) in his book ‘The Age of Discontinuity’. The term ‘Learning Society’ was used by Torsten Husen in 1974 and Hutchins (1970), the genesis of which lies in the concept of life long or continuous learning which was later on stressed in UNESCO reports of 1972 and 1996. The concept of global village has its genesis in the concept information society, “information revolution” and communication technologies. The world has shrunk into a small village due to the emergence of information and communication technologies. Alvin Toffler (1980) has advanced the idea that power at the dawn of civilization resided in the ‘muscle’. Power then got associated with money and in 20th century it shifted its focus to ‘mind’. Thus the shift from *physical power to wealth power to mind power* is an evolution in the shifting foundations of economy. This shift supports the observation of Francis Bacon who said ‘knowledge itself is power’, stressing the same point and upholding the supremacy of mind power, in his characteristic expression, Winston Churchill said, “the Empires of the future shall be empires of the mind”. Thus he corroborated Bacon and professed the emergence of the knowledge society.

Information and Knowledge Revolution

In the last fifty years information and knowledge revolution has become a reality. With the advent of satellites, televisions and computers, there is a great flow of information and knowledge. Boundaries between many disciplines are blurring. New disciplines have emerged. There are institutions which evaluate and undertake research on various aspects of knowledge and information. Knowledge and information are imported and

exported. There is a constant sharing of knowledge going among institutions and individuals. Institutions have become information and knowledge –oriented institutions. Even daily newspapers have become knowledge papers.

With the advent of knowledge industry, the epistemology of knowledge has also undergone change. Theory of chaos, fuzzy logic and theories of probability have become important. New sciences like Neuro-Biology are emphasizing on mind-body symbiosis.

Knowledge workers play a crucial part in the knowledge industry where knowledge is produced, transmitted and consumed. There is also networking of knowledge workers and of knowledge institutions.

The management system of knowledge industry has to be closely re-looked into. Effective and efficient ways to manage knowledge workers are to be evolved. Obviously, the traditional, administrative and bureaucratic approach will not be adequate with respect to management of knowledge workers. Universities, colleges, schools, institutions of professional learning are all crying for a new management system that would be dynamic and responsive.

There are places where knowledge is produced. Sufficient resources have to be made available to these centres. The processes and procedures which govern knowledge institutions, are to be made more innovative, creative, flexible and responsive. Faculty members of world-class competence have to be nurtured and recruited, retrained and retained to ensure maintenance of levels, standards and dynamism. A constant research and review activity has to go into the various aspects of knowledge projects.

Responsive and effective distribution systems are an essential pre-requisite in a knowledge industry. These often are weak. Within the knowledge distribution systems there are leaks. There are information rich and information poor societies and there is a skewed distribution of knowledge. Yet an average person today has more knowledge than his counterpart had a hundred years ago. An average patient today has more medical

knowledge, an average individual has more legal knowledge and an employee has more managerial knowledge than his counterpart had say 50 years ago. Thus in the knowledge revolution, knowledge has not remained the monopoly of a few. And yet the distribution system has gaps and leaks and presents a skewed picture.

Knowledge or information revolutions have become a reality because of some outstanding breakthroughs in the human history. Some of them occurred when:

- alphabets were created
- paper was invented
- zero was discovered
- decimal system was invented
- printing press was invented
- telegraph and radio were invented
- telephone, television, fax machines and Xerox were invented
- computers and internet were invented and
- satellites were put into orbit and telecommunication became a common experience.

These breakthroughs have resulted into the present information and knowledge revolution. Fruits of knowledge revolution are available but there is mal-distribution. This has contributed to development of islands of prosperity and continents of ignorance, poverty, illiteracy, over-population, backwardness and poor health. If knowledge industry and knowledge society is to develop properly then information has to be structured in such a way that it fulfils some basic conditions of inter-activity, mobility, convertibility, connectivity, ubiquity and globalization, as given by Toffler (1990).

Distances have shrunk in time and inter-activity is instantaneous. Inter-activity results when the sender and the receiver both interact and when electronic messages of one medium interact with messages of another medium. Video conferencing is one such example.

Another feature of the knowledge society is mobility in the information technologies. Mobile phones and lap top computers are examples which have made mobility a positive attribute of communication revolution. Another feature of information revolution is convertibility. With appropriate machines, messages of one medium can be transferred on to another for example films can be transferred on to video. Connectivity is another important feature of information revolution where different devices are connected with one another. Multimedia is an example of connectivity where audio, video, text and graphics are combined to produce information. Now the computers can be connected with audio and video by attaching audio CD or video CD players to them. Presentation of computers can be displayed on screen, thus connecting it with the functions of OHP. Ubiquity means the way in which various messages are made available everywhere to different economical layers of the society. During the Iraq war the messages were available in metropolitan cities, state capitals, district headquarters and even in small villages where antenna discs were available. The future of economy, stability and development of any country would depend upon how wisely it masters information and knowledge technologies.

The first important fact is to ensure that knowledge does not remain a prerogative of a few but is accessed by a large number of persons. The second important thing is to create facilities for accessing knowledge. The third important thing is to set up national and international knowledge corporations which will use knowledge both as raw material as well as the product. Knowledge networks need also to be built between the main land and Indian diaspora. With knowledge industry internal threats and external intervention will increase. The main question is how rationale, intellectual, emotional, aesthetic and spiritual knowledge can increase our happiness, harmony, peace, justice and a sense of proportion.

In a knowledge society, one has to guard against cultural colonization. Globalization will have a direct impact on culture. One has to make distinction between knowledge society and consuming society. Consuming society will have different keynote and ideological images and may lead to cut throat competition.

A system's approach should be followed in a knowledge society with respect to hardware, software, maintenance and management. Each situation should be examined on the basis of its inherent Strength, Weakness, Opportunities and Threat (SWOT). The critical points that need attention is the management of knowledge workers and knowledge institutions.

The economic, social, cultural, technological changes in the national and international scene contribute to the knowledge society. The present rate of economic growth can be substantially increased if India becomes super power in knowledge sector and if information and technology revolutions are properly understood and exploited. India can substantially eliminate poverty, generate wealth and can play a meaningful role in the international world order. Thus, keeping in view the emergence of knowledge society we briefly present below, the existing educational scenario.

Education as an Engine of Development: Education is an important input both for the growth of the society as well as for the individual. Properly planned educational input can contribute to increase in the national gross products, cultural richness, build positive attitude towards technology, increase efficiency and effectiveness of the governance. Education opens new horizons for an individual, provides new aspirations and develops new values. It strengthens competencies and develops commitment. Education generates in an individual a critical outlook on social and political realities and sharpens the ability to self-examination, self-monitoring and self-criticism.

During the last five decades we have gained valuable experiences in all spheres and stages of education in the country. The expectations from education perceived by learners, communities and people are being understood better. The potentialities for future growth are also before us. The expectations and the chance of their being achieved are separated by a wide gap of resource crunch, credibility of institutions, levels of commitment, efficacy of functioning and several others. Any vision of education 2020 would have to take these into consideration. The success of the 'vision' would depend upon the extent to which it would be realised in actual practice. Essentially one could visualise dreams which would be converted into reality through diligence, commitment and comprehensive action oriented strategies.

Contrary to the expectations from education at the time of independence, gaps in education in the context of have and have-nots are increasing. The thin line separating privatisation and commercialisation is getting blurred. Merit alone no longer remains the criteria for moving upwards in education. There is a visible loss of credibility of existing systems of imparting education in schools and also in institutions of higher learning. On one hand we are short of basic infrastructures and on the other, optimum utilisation of existing infrastructures has not been ensured.

Mere appreciation of creating a knowledge society and knowledgeable people is not sufficient. The message must reach each individual that these are times when every nation needs to move towards a learning society and knowledge society. People in India are better equipped to understand and appreciate it. They are familiar with traditional systems of creating , generating, transferring knowledge and the in-built respect in the society for the learned and the knowledgeable. These could become the cornerstones in moving ahead in building a Vision 2020.

Specific approach should be necessary to ensure extended outreach of scientific and technological literacy to every category of people. It would become an essential component of school education on one hand and that of the adult education initiatives on the other. The curricula have to be regularly reviewed and revised. Obsolescent must be discarded and new areas introduced without delay. Lack of attention to this aspect has resulted in avoidable curriculum load on young learners.

Education system of the country is already being influenced by international trends and scenarios. During the last couple of years, provision for admission to NRIs in various professional and academic courses have been made. A large number of foreign universities are opening avenues to young persons in India to get their degrees without leaving the country. There are trends to liberalise university systems which would permit more and more private universities. However, the impact on university education could become more evident in a couple of years. The nature of programmes to be offered by universities and institutions will continuously undergo drastic changes and transformation. Acquisition of mastery level skills and competencies would be the demand. Degrees may not retain their importance in relation to jobs.

Greater attention would be paid to understand and analyze learner interests, learning needs and learning choices. Specific learning needs shall have to be responded to at each stage of education at secondary and university levels. Cafeteria approach in the choice and selection of areas to be studied will become a common practice. Evaluation systems of the present will be discarded. Focus would shift more to accreditation and certification. These will have to be made available at the choice and convenience of the learner. Towards this an active interface of the formal education system with open learning and distance education shall have to be concretised. The Constitutional amendments leading to Panchayat Raj Act is one of the critical decisions which will have impact on the entire educational process in terms of its system, management, content, utility and credibility. It would ensure community accountability and responsibility coupled with necessary power and authority.

Education of the children will have to be examined in their specific contexts. The learning needs of the children in slums, in rural areas and in urban area would have to be met with strategies that would be appropriate to the situation and as such would differ vastly and widely. Issues of equity, equality would become very prominent. In a learning society none would tolerate being ignored or deprived of their right to a fair chance and equality of opportunities. The competition shall have to be transparent and honest. Favourtism, nepotism, corruption and other such practices, having reached their nadir, shall be resisted vehemently and violently.

The content of education shall no longer be determined centrally. There would be greater pressures from various sectors to develop content, learning and materials that would meet their requirements and needs. Issues which are emerging fast as areas of concern like energy, environment, pollution, land degradation, drinking water, health and sanitation, drugs and drinking, HIV/AIDS, malnutrition, mental and physical stresses emerging out of life styles and others would have to find appropriate response in the process of learning and skill development.

Re-generation of Indian economy shall continue to be highly dependent on re-generation of rural economy. This in turn would depend on achievement of universal elementary education and simultaneously on the quality of elementary education being imparted. The acquisition of skills during the first eight years in school shall become very important and relevant when this aspect is considered suitably. While focus on vocational education at secondary stage would gain strength, skill development in the earlier years would no longer remain neglected.

At present India has achieved a literacy rate of 64% but still the gross number of illiterates is the largest in the world. India has the third largest scientific and technological manpower of the world but it has also a high drop-out rate, only 2 out of 10 students reach the 9^{th} standards. India has institutions like Indian Institute of Technology, Indian Institute of Management and several schools that can be compared with the best of the institutions in the world. It also has institutions where required infrastructure facilities are awefully lacking. There is a great disparity of educational achievements between good public schools and government run institutions in rural and slum metropolitan areas.

There is a great pressure on educational system and it seems the existing system as such cannot bear the burden of pupils' pressure. There are examples of excellent dedicated teachers but there are many teachers who would rate poorly on competency, commitment and performance. Although Panchayat Raj Amendment Act provides decentralisation and flexibility there are also entrenched trends of bureaucratization and centralization.

Changes in the society are coming thick and fast. The changes are explicit in the sectors of economy and technology. They call for new shape of schools, new learner profile, teacher profile, and administrator's profile. More attention has to be given now to excellence, quality and efficiency so that peace and harmony in the society can be maintained. Acceptance and appreciation for diversity and pluralism is inevitable.

The future agenda for education will be to empower individuals, assure high quality of life and pave way to learning society. The new system of education has to be rooted to culture and committed to progress.

For taking India in the midst of knowledge Society and for ensuring India becoming knowledge super power we propose an Education Vision for 2020 but before that we will like to see how knowledge has been perceived in the Indian context.

Section – 2

Knowledge: The Indian Perspective

The term "knowledge Society" cannot be accurately translated into Indian language with its nuance intact and at the same time one cannot conceive of a society without knowledge. The emergence of any society has always been through knowledge. In the context of the term as used now a days, knowledge society (Venkatasubramanian, 2000) means "creating, sharing and using knowledge as the key factor in bringing about prosperity and well being of people."

The Sanskrit word for knowledge is *'gyan'*. In day to day language we also use words like 'education' or '*taleem'* or '*elm'*. Though these words differ with one another, there is a lot which is common amongst them. If one looks at the word 'gyan' one sees it has semantic relationship with 'shiksha' and 'vidya'. 'Shiksha' as defined in U*pnishads* is basically related to language, its use, articulation, its pronunciation, stress intonation, modulation etc.

The acquisition of knowledge is explained on the basis of two theories, one presumes that knowledge exists outside the learner and the teacher has to teach and provide that knowledge. The other explanation is that, knowledge resides within the learner and the teacher has to remove the learner's ignorance so that the learner can see his own knowledge and acquire it by self efforts. Indian perspective, supports and stresses the latter concept which represents constructivistic aspect of knowledge.

Various metaphors have been used in education to convey its essence. Education has been equated to activities undertaken by a gardener i.e. looking after and developing young saplings. It has also been equated with banking i.e. depositing knowledge in the mind of the learner. These metaphors communicate two different approaches of education. In the first case the potentiality of education resides within the learner and the teacher is seen only providing supportive help whereas in the second metaphor the student is seen as a blank slate and the teacher deposits knowledge. Now-a-days industry

oriented terms are used in the context of education. The terms like “knowledge workers”, “knowledge producers”, “knowledge brokers”, etc. are in fashion. Other words that one hears are productivity, utility, profitability, salability, marketability, etc.

In ancient India there were other metaphors and similes used for knowledge. They put education at the transcendental level. Knowledge (*Gyan*) was considered as *Amrit.* In *Isa Upnishad* it has been said that through *Vidya* one attains immortality. As Sri Aurobindo (1994) says ‘Reality has Unity’. “Consciousness about multiplicity is due to *Avidya*. The realization that “Unity” is the ultimate truth brings immortality.

The *Mundak Upnishad* (1.1.4) talks about two types of knowledge Para and Apara:

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Apara Vidya, includes the study of all the four Vedas, Shiksha, Grammar, Vedic rituals, Etymology, Prosody and Astronomy:

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Para Vidya included spiritual knowledge relating to their cosmic reality which is inexpressible, infinite, indestructible, beyond the life and death. In this context *Avidya* does not mean lack of knowledge *Avidya* is not ignorance, it means knowledge which relates to doing activities related to worldly subjects which does not lead to life immortal.

Knowledge has been considered as bliss that removes doubts, confusion and ignorance. The Gita (Chapter IV) uses three similes with reference to ‘gyan’, as a rapier (sword) which cuts asunder doubts and suspicions š××³×××ØÈ×³×× (4.42), second as boat, which helps one to cross the sea of ignorance š××³×´Á×Ä×ð³×ôÄ× (4.36), and third as fire, that burns out results of one’s deeds š××³×××Ü“³×«“²×‹»××Õ¦×Ô (4.19). It is also

mentioned there that those who are in doubt cannot achieve tranquility and peace of mind संशयात्मा ×ØÄ×³×Å¼××Ø§× (4.41).,

The world needs peace, progress, social cohesion and spirit to live together. These are the basic requirements which Delors Commission (UNESCO 1996) identified as the pillars of education. If we shape education on the principles of ancient Indian school of thought we will be in a position to prepare our youth for learning to live together. The need for international understanding was never so imperative as it is today. As Dr. Karan Singh (1996) in his thoughtful article observes, "knowledge is expanding but the wisdom languishing". There is a need to expose our young generation to ideas of universal love, tolerance and peace. "We have to work to remove orthodoxy and obsolescence orientations. There is a need to offer holistic education with multiple dimensions of human personality. There is a need that education should provide experiences which would reduce hatred, bigotry, fundamentalism fanaticism, greed and jealousy."

The Gita in a subtle way gives prominence to self-directed, self generated, self-initiated learning. It says one should raise oneself with own efforts †¯¾ð«×§»×³××§»××³×ÔÔ ³××§»××³×»×Ä×È××«¼×ð§×Ð „××§»×ôÄ× Ê¼××§»×³××ð ¹×³²×ä¾×§»×ôÄ× ×Ø¾´×ä¾×§»×³×: (6.5) , One should realize one's goals and aims through one's own efforts. Metaphysically speaking it means realisation and actualisation of self is through self only. Educationally this means that the process of education has to be self directed and self generated. The sense of fulfilment by self efforts was the core of ancient education. The "Learning To Be" (UNESCO 1972) mentions that man is an unfinished being and can only fulfill himself through constant learning. If this is so then education takes place at all ages of life, in all situations and in all circumstances of existence. Education must transcend its limits of institutions, programmes and methods. And this concept was presented in all ancient literature on education.

The concept "life long education" has been emphasised in the Delors Report (UNESCO (1996). It bases its faith in the concept of continuing education. It makes distinction between initial education and continuing education and finds the later in harmony with

the needs of the learning society. The commission observes that in 21st century, learning throughout life will be essential for evolving requirements of labour market, for mastery of the changing time frames and gaining rhythm of individual existence. Delors report interprets continuing education and life long learning as key concepts and finds it most relevant in the era of rapid globalization. Major transformation in the nature of employment and advances in science and technology make life long learning and continuing education a core component of the educational process. At this stage we must be very clear that illiteracy of the developing countries is as big an obstacle as functional illiteracy of the developed world. Both hamper the genuine growth of a learning society. In Indian tradition there is an injunction that activities relating to teaching and learning should never be abandoned or postponed. In Traitriya Upnishad it has been repeatedly said that self learning should never be abandoned, ÈÄ××²¼××¼××³×Ð »×× µ×»××Ø«§×Ä¼×»×Ð *f*

Open Learning and continuing education are two important concepts which have come in educational vocabulary in the last 30 years. This does not mean that the ancient Indian thinkers were unaware of these developments. Open learning continuing education which emphasise on life long learning has been a corner stone of Indian thinking.

Ancient Indian thinking has never given hundred per cent credit to formal institutionalized learning. In one of the *slokas* four sources of education have been identified through which learning takes place: It says "one fourth of the learning is done when the student is with the teacher, one fourth of learning by the learner's self-study and self-reflection. One fourth of the learning results by peer interaction and the last one fourth comes out of time context.

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There are also other powerful expressions which appear in Vedas, Upnishad and Puranas. One of the significant utterances of Atharva Veda is that the aim and goal of every man's

life is self-growth and self-enrichment and the mechanism for this is continuing life long learning: †°××³×Ô §×ð ´×ä¿Ç×³××Ä×¼××³×»×Ð *f*

„×ª×Ä×ÕÄ×ð« (8.16)

In Indian thinking education and learning is not an inert activity. It is dynamic and interactive. It depends upon thoughtful listening, quick grasp and wise application and thoughtful reflection:

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Formation of character development of values, inculcation of commitment is at the root of Indian thinking. Accumulation of knowledge and development of skills is only the first preliminary step. The flowering of education must be seen in modification of one's behaviour, in developing an open mindset, and in cultivating the finer sense of discrimination. *Achar Pratham Dharma* means behaviour is the first requirement.

In the Indian context *gyan* (knowledge) is a spiritual activity. It is the aim and objective of all individuals, to equip themselves with knowledge and attain *Vivek* and *Vinay*. *Vivek* is the discriminating wisdom: ×Ø³×§¼×××Ø³×§¼× Ä×È§×ä×ØÄ×Ä×ð‹,

Arrogance and pride have been considered as negative human dispositions. It will be appropriate to recall, A.N Whitehead who said "I plead for a little humility. The self confidence of the learned people is the cosmic tragedy of civilisation".*

As opposed to narrowness, self-centredness, greed, anger, worldly infatuation, true knowledge as explained in the Gita, inculcates truthfulness, fearlessness and an abiding faith in non-violence.

* Quoted in Radhakrishnan, The Present Crisis of Faith, New Delhi, Orient Paper Book.

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The word *Vidya* as explained by Prof. Misra (1998) is made up of the root word '*Vid'* which has four meanings and comes very close to the four pillars of learning Delors Commission (UNESCO 1996):-

Vid	=	To know (Cognitive aspect)
Vid	=	To acquire (psychomotor aspect)
Vid	=	To perceive (perceptual aspect)
Vid	=	To internationalise.

Similarly, the other word *Shiksha* comes from the root *Sak* that denotes "potentiality". In that sense *Shiksha* means empowerment. *Shiksha* was considered as one of the six branches of Vedanga which stressed on pronunciation intonation, modulation, etc. The advantages of knowledge and the *gyan* have been elaborately discussed by Bhrataari:

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It has also been observed that without diligence and practice, one will never attain *Vidya*. Further, *Vidya* gets destroyed or diluted if it is not practised or revised from time to time what Bruner calls as "revisitations". The process of attaining *Vidya* through analysis, synthesis and reflection is based on sound pedagogical principles. Importance of questions and cross questions have been greatly recommended.

Self actualisation, a term used in modern psychology comes closer to *Aatma Darshan*. This point has been stressed by Goldstein (1940) and Maslow (1954, 1962)

In Indian perspective a school is not a school plant but an abode of *Vidya* (abode where one knows, think and become someone) it was called 'Ashram', the term that stresses the need of hardwork, labour both physical and intellectual.

The aim of education is not to know things superficially. Sri Aurobindo (1994 p.248) says "Simply to know the eternal and to remain in pain, the struggle and inferiority of our present way of being, would be a poor and lame advantage". Thus, knowledge brings us the fullness of being 'brahmavid', "Being" is an existence in its fullness. Being itself is power, consciousness and delight. Thus, the emphasis was on "Being" (*Vid)* rather than on empowerment which is the trend today.

Section – 3

Educational Vision

Two of the finest statements of educational vision in India must be recalled while attempting to perceive Vision 2020 for education in the country. The first of these was made by Gandhiji in 1931 in London in the context of universalising education in India.

> *'India lives in its villages. It is there that our producers live, voters live, the poor and illiterate live. It is the villages that hold the key to the country's problems. So vision of future India can be greater than to rebuild its half a million villages. The irony is that in terms of the teaming millions inhabiting these villages our developments, our democracy, and our education have all become irrelevant. But once we decide to approach them in the right spirit they are bound to respond, and rise to end their suffering. It may be that in the first phase selected homogenous SC/ST and other backward villages may have to be taken up. In case whole villages do not come forward in the beginning, then mutual-aid teams may have to be formed. Naturally in the whole process of rebuilding villages education will have the most vital part to play, because it alone can prepare people's mind to receive new ideas, and accept new tools, new relationships, and new forms of organization'.*

The second vision statement is contained in Article 45 of the Constitution of India: The state shall endeavour to provide within a period of ten years from the commencement of this Constitution, for free and compulsory education for all children until they complete the age of fourteen years.

The framers of the Constitution, knowing fully well that literacy rates were only 17% at that stage, had the courage and conviction coupled with confidence and self-assurance that it would be possible to universalise education within the next ten years. In fact the

mandate given in the Constitution is pregnant with 'dream' potentialities like equality of opportunity to all children in terms and participation and success. It also unfolds the possibilities for better quality of life, freedom from ignorance and obscurantism.

India after 1947 has most assuredly marched ahead as a free, democratic, secular republic. During these years education has always been considered as the engine of personal, social and economic growth. Over the years, at regular intervals, the nation has taken stock of growth and developments in education and planned activities for its future development accordingly. In 1947, 1953 and 1966 it has looked respectively at university education, at secondary education and education in its totality. The nation has made concrete formulations on educational policy in 1968, 1986 and 1992.

Elementary Education

Universalisation of Elementary Education has been given the highest priority since Independence of the country. In an attempt to fulfill this mandate several interventions and initiatives were undertaken in the past such as enrolment drives, community awareness campaigns and incentive schemes. They brought remarkable progress as is evident from the enclosed Table 1 giving state-wise number of schools and enrolment in primary and upper primary schools. The goal still remained to be fulfilled because in 1998-99 approximately 407 lakh children of the age-group 6 to below 11 years and 306 lakh children belonging to the age-group 11 to below 14 year were out of school (refer table 2). The Ninth Five Year Plan (Planning Commission, 1999) document envisaged additional enrolment of lower primary stage during Ninth and Tenth Five Year Plans as 250 lakh and 300 lakh respectively. The progress achieved so far is much below than the envisaged targets by the end of 2001-2002, i.e. end of Ninth Five Year Plan (Table 2) approximately 487 lakh and 386 lakh children of the age group 6 to below 11 and 11 to below 14 years respectively will likely to remain out of school. The progress of individual states is at variance. Especially the educationally backward states like Andhra Pradesh, Assam, Bihar, J&K, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh and West Bengal have to put more efforts. The new thrust under Sarva Shiksha Abhiyan and empowering the Panchayati Raj Institutions for development of education at the grass

root level are the vehicle to fulfill the goal of UEE. To fulfill the target by the end of 2007, special attention is to be paid to enroll the poor children, slum dwellers and working children. As per 1991 Census, the working children were 112.8 lakh and their number must have increased a substantially during last nine years. Besides the most important activity during this period is required to be effectively monitoring of the aforesaid interventions.

Secondary Education

Demand for secondary education depends upon the performance of upper primary stage, which in turn depends upon the performance of lower primary. During VIII and XI plan period, focussed attention has been paid to improve lower primary followed by improving upper primary sub sectors under UEE commitment of the nation. The X Five Year plan will be facing the issue of increased demand for places in secondary schools. The state-wise position as on 1998-99 for number of schools and enrolment are given in Table 3. Estimation of demand for secondary stage of education is given in the annexure. Based on the above estimation, around 5000 to 6000 schools having secondary sections having IX and X classes are to be opened and around 50 to 60 thousand additional teachers are to be appointed annually during the X th Five Year Plan. Apart from the quantitative dimension, the secondary education has to face the demand for quality of education in the rapidly changing economic and social contexts in different parts of the country.

Vocationalisation of Secondary Education

The Ninth Five Year Plan laid down the criterion of diversion of 25 percent students of 10+2 stage to vocational stream so that they become self-employed or wage-earner in the field of their choice. The scheme is to be properly strengthened by establishing various linkages, as envisaged in the IX Plan document.

Need for Higher Priority to Improve Quality and Relevance

Optimum utilisation of resources made available for secondary education depends upon the priority to quality as compared expansion. The post-independence scenario of

secondary education indicates that the policies followed have not focused on the quality. There is an excessive dependence on the examination based outcome indicators. Examinations for certification do not indicate the changes in the quality of secondary education. The nation has no database on the school outcomes beyond lower primary stage. Even at the lower primary stage, only at one point of time tone (1989) we have achievement indicators comparable across states. Even to get feedback for curriculum revision, one needs indicators of processes and outcomes at given points of time. During the remaining term of IX Plan, serious efforts should be made to generate such data to obtain the perspective of the X Plan. The X Five Year Plan should provide for quality audit of schools in different states. Quality audit should focus on functional input factors, the education process itself and obtaining achievement levels based on standardised achievement tests. At present, the All India Educational surveys carried out by NCERT contain some parameters related to quality. This has to be supplemented by National Level Studies on the utilisation of inputs and school outcomes. NPE (1986) and POA (1992) suggest establishment of National Testing Organization. This needs implementation. Further, special attention needs to be given for quality improvement of teaching in the mathematics, science and computer education as stressed in the IX Five Year Plan document to bring improvement in quality. There has been a wide spread decline in demand for higher education in basic sciences. In the long run this may adversely affect scientific advancement in the country. Partly low demand is due to the curriculum and teaching-learning processes carried out in secondary schools and partly it is due to the attraction towards professional courses. In order to attract and retain bright minds in the fields of basic sciences, identification of talents and its nurturing, attracting them to the careers in basic sciences and improvement of science teaching in schools should find place in the strategy.

Vision Statement

Keeping in view the achievements and gaps of education and keeping in view the present mood of the country and the economic and technological upswing we would like to construct a vision statement based on the faith that India will become a developed country by 2020 and all activities be taken up in a mission mode.

By 2010 India will have 100% elementary education for the age group 6-14. School curriculum will be so planned that it will promote peace, harmony, social cohesion and composite culture. Education will empower learners for self growth and higher quality of living. Distance and open learning will become an integral part of instruction at all levels. Virtual classroom and self learning (using networks and websites) will get strengthened. Education will protect and promote ancient wisdom and will be indigenous in nature. School and university education will have an open window to international achievements. Educational management systems will become more sensitive, open, transparent and learner friendly and will focus on to provide academic support to students. The overall vision of Education – 2020 is to create a learning and knowledge society.

Thrust Areas

- With elementary education becoming universal, more efforts will be put to provide quality secondary education, parent education, vocational education and teacher education.

- Intensive efforts will be made to provide educational opportunities through distance education using information and communication technologies. Students evaluation will become more formative and flexible. Curriculum will have a provision to offer cafeteria approach.

- School curriculum will not unnecessary load students. At the same time it will have comparative international standard and promote critical and independent thinking.

- Pre-primary education and early childhood education will become an important element of school education supported through public funds. At present it is offered by non-governmental agencies only at few places. Government's efforts in this direction will also continue through Anganwadis and Integrated Child Development Scheme (ICDS). By 2020 it will become a regular feature, available to all children.

- Adult education will be of comprehensive nature encompassing, functional, literary, post literacy programmes and life long continuing education.

- Universities will take greater interest in college education and support Staff Development Programmes through extension activities and Academic Staff Colleges. By 2020 each university will have Academic Staff Colleges which will undertake in-service education of college and university teachers on a regular and continuous basis.
- All educational resource institutions like National Council of Educational Research and Training, State Council of Educational Research and Training, National Institute of Educational Planning & Administration and District Institute of Education and Training will get electronically connected and so will the UGC with its Regional Offices.

- Teacher education programmes, both Pre and In-service, will undergo drastic changes to make them relevant and rigorous. In-service programmes will become more communication technology oriented and will use virtual classroom teaching practices and will utilize internet facilities.

- Educational management will become efficient, effective, sensitive, responsive and performance oriented.

- Income generation projects will become a regular feature of all institutions.

- Preservation, protection and modification of indigenous knowledge and composite culture will become an important objective of education.

Strategies

To achieve the above areas, the same strategies are suggested as illustration. When elementary education becomes universal and adult illiteracy gets liquidated, the education thrust will shift to the remaining two important educational issues, strengthening of secondary education and vocationalising education. These priorities were identified decades earlier but steps taken in achieving these aspirations have been partly inadequate and partly ad-hoc. These need to be reiterated and reinforced here. In such ventures, potential of communication technologies should be fully and optimally utilised.

Networking school-level resource institutions

This strategy is based on the assumptions that resources are always inadequate, and widely distributed, it is by their proper mobilisation that they can put them together and make a critical mass. At present, there are resource institutions at national, state and district levels. National Council of Educational Research and Training, National Institute of Educational Planning and Administration and National Open School are resource institutions at the national level. State Council of Educational Research and Training, State Institute of Education and Central Institute of Educational Technology are institutions at the state level and District Institute of Education and Training at the district level. The first requirement is to build a network of these institutions and establish links amongst them. To take up a concrete example, electronic links between National Council of Educational Research and Training and all the State Council of Educational Research and Training should be established preferably by 2001. This will make National Council of Educational Research and Training and State Council of Educational Research and Training interact closely on various issues related to school curriculum, teacher training, research projects. In case the technological facilities are made available in National Council of Educational Research and Training to undertake 'one-way-video' and 'two-way-audio', many programmes can be speeded-up and streamlined. Similarly, even on experimental scale one or two educationally backward states may be identified where State Council of Educational Research and Training could be electronically connected with all its District Institute of Education and Training. As an illustration, if State Council of Educational Research and Training Rajasthan located at Udaipur gets

connected with all the 23 District Institute of Education and Training of the state, then it would be very easy to deliberate on programmes, prioritise the programmes, monitor them and provide timely feedback. If this is done, District Institute of Education and Training can get continuous and instant feedback from the State Council of Educational Research and Training. We propose that some of district level resource institutions be electronically linked to state level once and the state level resource institutions with national level institutions. This could be a concrete activity for the next 2 or 3 years.

Building strong educational information management system

This action area is based on the assumption that in the existing situation most of the actions are taken on the basis of personal liking and disliking, personal preferences and on hunches. If decisions are made on the basis of information available they would be more objective. Thus developing a management information system is the first pre-requisite.

At present there are no Educational Management Information Systems (EMIS) in many institutions. The Educational Survey and Data Processing Unit of National Council of Educational Research and Training makes available school surveys in CD ROM hard copy. Survey of educational research that National Council of Educational Research undertakes in areas like teacher education, educational philosophy, distant education, education psychology, teaching methodology is another input for Educational Management Information Systems (EMIS). It is now proposed that a mechanism should be designed whereby institutional resources are made available on Internet and anyone who wants access to it , is free to do so. The EMIS could be thought of in various fields, for example they may be EMIS on teacher training institutions, schools qualification of teaching etc. In the first step, teacher training institutions of the secondary level may be enlisted with specific details related to location, address, telephone number, etc. In the second step, various courses offered by these institutions could be made available. In the third step, institutions which have facilities for M.Phil. and Ph.D work should also be enlisted. The point is that the strong EMIS should be built in areas like educational research, education publications, etc.

Making available parent education programmes round the clock

This action area is based on the assumption that parents want to increase their awareness about various educational matters. If appropriate educational awareness programmes are telecast and made available to the general public especially parents, it will help them to become better productive members of the society.

A society cannot be considered a knowledge society unless the members of the society have facilities and opportunities for life long learning. With the coming up of educational channel, the nation should be in a position to offer educational programmes of various types through satellite and computer networks. This means there would be programmes for adults, parents, etc. these programmes should be telecast round the clock.

Change to digital economy will call for new steps such as need for high speed and large band width networks so as to ensure last mile connectivity. A lot of content centres will have to be set up to accumulate, collect and preserve ancient knowledge. Efforts to preserve folk stories, folk proverbs, folk sayings, etc., will also be made. Attempts will also be made to put some items of curriculum on the Website. Thus, by 2005 E-books and E-magazines may be available in schools and universities. The role of teachers as facilitators would expand when facilities of Internet are made available in schools.

Offering special programmes for gifted and talented students

It is known to everyone that the real treasure of a country is its youth and specially youth who are gifted and talented. Any country which does not nurture the giftedness and the talent of its youth can never dream of becoming a progressive and forward-looking society.

There are programmes which are in place that are geared to search and nurture national talent research but they are sketchy and inadequate. Central Government and the state governments have some plans to identify young talents, both in science and social science streams. There are also certain incentives for those who have been identified as talented

but these are too inadequate and do not cover a great mass of students. It is, therefore, proposed that to celebrate "knowledge society" the nation must develop a comprehensive programme to identify, nurture and support the talent at block and district level. It should be the duty of the Panchayats as well as of the state governments to identify the talent and create special facilities for their growth and nurturance.

In every district there will be a strong provision for education of gifted students. To begin with, each district will have schools for the gifted in the area of academic subjects, music, dance and painting and sports. Curricular activities will be so structured that they promote student mobility.

Special Programmes for Girls Education

Providing girls education and ensuring their full enrolment should be the educational objective to be attained by 2020. At present, the drop out rate in class VIII is as high as 82% in Bihar 83% in Meghalaya and nearly 80% in Rajasthan. One must remember that if we educate a boy we educate a human being and if we educate a girl we educate several generations. Article 45 of the Constitution provides free and compulsory education both for boys and girls up to 14 years of age. Education for All (UNESCO 1990) highlights education for women claiming that it is impossible to have the educated people if there are no educated women. Amendment 73 and 74 of the Indian Constitution which give special power to Panchayati Raj envisages that a third of the seats in local governments, rural Panchayats and urban environments be reserved for women. However, present position is alarming. The percentage of girls in classes VI- VIII is approximately 25% in Rajasthan, 29% in Bihar, 34% in Madhya Pradesh and 31% in Uttar Pradesh*.

Education of Scheduled Castes, Scheduled Tribes and other disadvantaged groups

For achieving cohesive and productive society special programmes have to be launched for the Scheduled Castes, Scheduled Tribes and other disadvantaged groups. This can be done by providing positive protective discrimination and also by integrating socio

* Source: NCERT (1999) School Education in India as on 30.09.1993.

cultural and linguistic specificities into pedagogical and curricular requirements. Contextualization of curriculum will be very important if drop-out rate of scheduled castes, scheduled tribes students is to be arrested. Facilities like mid-day meals incentive schemes and of residential schools will have to be augmented.

Inclusive Education for Special Needs Students

By 2020 attempts will be made to offer integration education on comprehensive basis for physically and mentally handicapped children. In 1974 Government of India started Centrally sponsored scheme for integrated education of the disabled children (IEDC) in the Department of Social Welfare, which was later on transferred to Department of Education in 1981. On the international scene the World Conference on "Education for All" (UNESCO 1990) advocated that steps need be taken for education of every category of disabled person as an integral part of education system. Another UN initiative was equalization of opportunities for persons with disabilities 1993, wherein it was proposed that members States will provide education for persons with disabilities as integral part of the education system. The Salamanca Statement and Framework for action on Special Needs Education (1994) provides for education of disabled children in nearby neighbourhood schools and recommends that children with special needs must have access to regular schools. Inclusive education for special needs students has a wider connotation than merely providing education. It includes combating discriminatory attitudes of students and teachers and creating a community that welcomes inclusive education. One of the important features of inclusive education would be to set up a resource rooms for supporting special needs children in schools.

Special programmes for countries which have Indian-origin population

Countries like USA, Canada, South Africa, U.K, Australia, Caribbean Islands have large population of Indian origin. These people still keep up the Indian traditions and want to maintain their cultural roots. The younger generation in these countries, is keen to know about the culture of India and also their provincial language like Gujarati, Marathi, Tamil, Telugu, etc. It would be most appropriate if suitable programmes are launched for

teaching these languages to the willing people as well as exposing them to common features of Indian culture. This is a Herculean task, difficult and complicated but will be greatly appreciated by the Indian people abroad.

Income generation should be one of the objectives of knowledge society. International markets may be explored where Indian textbooks or other materials like computer programmes can find access. There are about 20 million Indian diaspora. Educational links through University Grants Commission, National Council of Educational Research and Training, Indira Gandhi National Open University and Central Board of Secondary Education will be developed and programmes will be designed to keep Indian origin persons in close touch with Indian culture and Indian Languages.

Providing and promoting indigenous knowledge

In the knowledge society communities will assess education in quality and utility as per their own norms. During the first two decades in the post Independence period, the process of expansion of education created awareness and consciousness amongst the people on the need for sending children to school. A certificate at the matriculation level or a graduate degree was a great achievement in fifties and sixties. The situation at the beginning of 21st century is different. Mere education does not convey much meaning to the parents and communities. Children rarely learn anything substantial of their own environment, flora and fauna, social and cultural context, local resources, skills, traditions, festivals and economic scenario. Had we realised the significance of acquainting children with the indigenous techniques of water resource management, traditional method of preparing fertilisers, preserving foodgrains, utilising herbs and ensuring cleanliness and developing a sense of attachment and responsibility towards people and the community, the scenario would have been very different in every sphere of human development. We would not have landed up in such a crisis as the water famine, wastage of foodgrains and non-availability of health support to the majority of the people in the country.

The Report of UNESCO Commission on Education for 21st Century entitled: 'Learning – The Treasure Within' pleads for an education which is 'rooted to culture and committed to progress', Gandhiji wanted education to be so rooted that there would be a continuity in the social, cultural and economic environment of life. A sound education according to him would prepare the present generation to take up activities which relate to the previous generation and ensure a continuity for the next generation. A sense of pride in the achievements of the predecessors and in the culture of the country is a pre-requisite for a dynamic and forward-looking society. He always pleaded for preservation of the culture, heritage and its enlargement for the posterity. To him, these were most important functions of education. Development of a harmonious and integrated personality would just not be possible if the system does not believe in this philosophy.

Curriculum: Review, Revision and Development

School level resource institutions like National Council of Educational Research and Training, State Council of Educational Research and Training, Central Institute of Educational Technology etc., as well as Universities will have to develop a mechanism for curriculum review, revision and development, both at schools and university level, which should expose students to latest global developments as well as to indigenous knowledge. Curriculum will pay attention to indigenous tradition and enormous amount of wisdom and experience that has been drawn from various regions and sections of the Indian society in knowledge relating to Ayurveda, herbal treatment, massage therapy, achievements in psychology, mental health, logic, epistemology, jurisprudence, pedagogy, etc. Curriculum will also offer fast track and front line curriculum in areas such as information technology, bio-technology etc. Curriculum will emphasise value education, meditation and importance of silence. It will gradually build in students higher levels of awareness from animality to humanity to rationality to civility to divinity. Curriculum should make students aware of positive and critical thinking and the harms of negativity and negative thinking.

Curriculum will be so designed that it will not load students; neither with the physical load, nor with the load of non-comprehension, and irrelevance. Curriculum will stress on joyful learning, functional science and functional mathematics. It will not unmindfully reject memorisation. A mechanism will be evolved to ensure that school college and university curriculum as well as the curriculum of teacher education gets reviewed, revised and updated every five years. It may also be stressed that Curriculum in school education provides enough stress and importance to computer education, information and communication technologies and other frontline curriculum. It should also be stressed that distance education and open learning systems are optimally used.

Computer education will be introduced in a phased manner:

- Computer literacy in all schools.
- Computer assisted learning in a large number of schools (10,000).
- Computer aided learning in some schools (1,000).
- Intensive computer education in some selected schools (100 called as smart schools).

Teaching-learning material which is largely in the form of textbooks and workbooks, now will accordingly change when facilities of Internet and Website are made available in schools. Multimedia packages, CD ROMS and hyper texts need to be developed and made available in the library and students.

Adult Education

It is heartening to note that India has attained literacy rate of 64%. We hope by 2020 illiteracy will be totally eradicated. In the subsequent decade comprehensive adult education programmes including parent education will be launched. One set of adult education programmes will relate to post literacy education, another set of programmes will be vocational and technical in nature. The third type of programmes will be related to life enrichment activities, culture, etc. These new initiatives will call for setting up community colleges in each district.

Adult education as literacy activity should continue till we achieve 100% literacy. Simultaneously we should plan programmes for neo-literates and post literacy programme to consolidate the gains achieved in the literacy phase. The post literacy phase should enhance adults reading, writing capabilities, as well as give them a adequate orientation about social and cultural environment. The third phase of functional literacy will be to provide specific inputs to specific target groups. For example functional programmes may be designed in music, media appreciation, computers, literacy, agriculture, horticulture, banking, hotel management, etc. The important thing while designing these programmes is to ensure that under these programmes the learners are offered specific content which meet their vocational, professional and interest needs. In a way, functional programmes become the beginning point for life enrichment. The types of life enrichment programmes fall in the category of social, political, moral, philosophical literacy programmes as well as may encompass areas relating to aesthetics, painting, interior decoration and language courses. Community colleges are conspicuous by their absence in India. One can see these colleges in Canada, Australia and USA. India should not copy the western model but should launch community colleges of a new type which will educate learners to senior secondary level as well as provide life enrichment courses. They would become adult education centers with links with school education.

Teacher Education

Teacher education programmes by 2020 will be drastically revised. At present, in most of the teachers colleges the teacher education programme (B.Ed.) is of one year duration after graduation. This trend will change and teacher education after graduation will become of two year duration. This is because in one year the knowledge base relating to pedagogy cannot be developed fully. Further, pre-service education should also provide enough exposure to teacher so that they can fully utilise information and communication technologies.

Initial teacher education programme (B.Ed.) by 2020 all over the country will be of longer duration, four years after +2 and two years after graduation. The focus of teacher training will become more school based. Teacher education programmes will offer inputs so that the teachers become more commitment oriented. All teacher education programmes pre-service as well as in-service will have substantial input of information and communication technology.

In-service education at the moment is ad-hoc. Enough resources will have to be provided to District Institute of Education and Training so that they become think tanks of education in the district. The linkages between National Council of Educational and Training, and State Council of Educational Research and Training should be electronically built with the objective that its connectivity will facilitate decision making and programme formulation.

The thrust of teacher education programmes go to developing thinking capabilities in student teachers. In that case present programmes which emphasize memory will be appropriately modified. This does not mean that memory and fact learning has no place in school education. As a matter of fact in the initial years there is a need of memorization and this point has been fully endorsed by UNESCO Report 1996.

Teacher education programmes will develop in teachers a new insight about plurality of perspectives. This means each individual is unique and different from the other.

There is another aspect which relates to developing collaborative programmes of teacher education jointly by the National Council of Educational and Training, National Institute of Educational Planning and Administration, State Council of Educational Research and Training and District Institute of Education and Training. At the moment these different institutions which are research and resource organizations work more or less in isolation (Trist 1983). Complexity and the flux of environment give rise to meta problems which are different from discreet problems. Meta problems require inter-organization collaborations which provide poly dimensional and multi facet solutions. Thus, it is

necessary that institutions like National Council of Educational and Training, National Institute of Educational Planning and Administration, National Council of Teacher Education, University Grants Commission and others have more collaborative projects.

Educational Management

Education management, for that matter any management system whether in education or defence or industry or health or social sector, has to abandon its *babu* culture. It should optimide resource utilisation rather than saving resources, it should meet objectives and criteria rather than show internal efficiency, it should satisfy needs rather than reduce costs. Management should see a problem in the holistic manner rather than offer solutions for bits and peaces and it should create alternatives rather than follow holy procedures. Education management must become more effective doing the right things rather than being more efficient.

Educational management will need a paradigm shift. It must have and create a culture of performance. (Volcker Commission, 1990) and must show a bias for action (Peters & Waterman,1982). It has to be efficient, effective, transparent and sensitive to future needs. It must provide single window service facility. The present administrative style would undergo a change. The future administrative configurations will be such that they can be restructured, relocated or co-located. Management will give greater emphasis on appointment of project and contract based staff.

All administrative units will be electronically connected and will have strong component of educational Information Management Systems (EMIS). It should have more decentralization, less bureaucracy and more converging governance. In each State there will be a State Educational Council which would look into the total gamut of activities relating to school from pre-primary to university level. There will also be District Education Councils with appropriate authority and responsibilities. The planning unit will become District and then subsequently Block. There will be more convergence of funding.

Higher Education

Universities will give more attention to under graduate teaching. By 2020 at least 50% of university age learners will receive higher education. Each university will have some special programmes suited to the genius of that locality. University Education Departments will undertake more programmes relating to extension and research in school education. Links will be developed between school education and higher education.

In many universities teaching at under graduate level is not given full attention. This trend harms university education and must be checked. Most of the teaching in universities and colleges do not keep the potentialities of the learner in view. University teachers often keep only the prescribed content in focus and are unmindful of the learner's abilities to assimilate. University teachers will have to be oriented towards this through Academic Staff Colleges.

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Annexure

Estimation of Future enrolment in class IX and X using trends during 1993-98 period

Projected enrolments are rough estimates. The procedure is as follows:

(i) Based on the aggregation of actual enrolment for each state using the grade-wise enrolment, figures for India for 1993 and 1998 was obtained.

(ii) Annual average growth rate during 1993-1998 of Upper Primary stage was obtained. It was found to be 3.8 percent per year between 1993 and 1998.

(iii) Using the average annual growth, total enrolment at Upper primary stage was estimated annually for 2001 to 2007.

(iv) The actual enrolment in the terminal grade (VII/VIII) for each state was aggregated to get the all India figures for 1993 and 1998.

(v) The proportion of terminal grade enrolment in the total upper primary enrolment was obtained for 1993 and 1998. These were 28.8 and 30.16 respectively.

(vi) Based on the proportion of terminal year enrolment for 1998 taken as 30 percent and the projected total enrolment in upper primary stage, the number of students in terminal year from 2001 to 2007 were obtained.

(vii) Proportion of enrolment in the beginning year of secondary stage out of enrolment in terminal year of upper primary stage for 1993 and 1998 was obtained separately. This was 86 percent in 1993 and 83 percent in 1998. These were used as a proxy to the transition rate. Using the transition rate of 83 percent observed in 1998, enrolment was estimated for the period from 2001 to 2007.

(viii) The observed proportion of beginning year of the secondary stage in the total enrolment of secondary stage was 55 percent in 1993 and 45 percent in 1998. Having estimated the enrolment in beginning year of secondary stage for each year, the total enrolment of the secondary stage for respective years were obtained by doubling the beginning year enrolment (i.e., 50 percent as beginning year and 50 percent in the remaining classes of secondary stage). The Table 1 provides the result of the exercise.

Table 1: Estimated demand for secondary places during X Plan Period

Source	year	Total enrolment in upper primary	Enrolment of terminal class of upper primary	Enrolment in Beginning class of secondary	Total Enrolment in secondary
VI AIES	1993	34071058	9841148	8428490	15219392
MHRD	1995	41014136	11814891	8987834	16779905
MHRD	1998	41926086	12644079	10469101	22861119
Estimated	2001	46705660	14011698	11629709	23259418
	2002	48480475	14544142	12071637	24143274
	2003	50322733	15096820	12530360	25060720
	2004	52234997	15670499	13006531	26013028
	2005	54219927	16265978	13500761	27001522
	2006	56280284	16884085	14013790	28027580
	2007	58418935	17525680	14546314	29092628

Estimation of additional schools and teachers

According to the Sixth All India Education Survey (1993), the average size of secondary stage (including all types of schools having secondary stage) was 174. Similarly teacher pupil ratio for secondary stage was 1:17. Extrapolating these values, the number of schools and additional teachers have been arrived as given below.

Year	Enrolment	No of schools	No teachers	Additional schools	Additional teachers
1993	15219392	87238	895431		
2001	23259418	133674	1368201	46436	472770
2202	24143274	138754	1420192	5080	51991
2003	25060720	144027	1474160	5273	53968
2004	26013028	149500	1530178	5473	56018
2005	27001522	155181	1588234	5681	58066
2006	28027580	161078	1648681	5897	60447
2007	29092628	167199	1711331	6121	62650

TABLE 1

Number of Schools and Enrolment in Primary and Upper Primary Classes in 1998-99

(in '00)

Sl. No.	State/Union Territory	No. of primary schools	Enrolment in classes I - V						No. of upper primary schools	Enrolment in classes VI - VIII					
			Total		Scheduled Castes		Scheduled Tribes			Total		Scheduled Castes		Scheduled Tribes	
			Total	Girls	Total	Girls	Total	Girls		Total	Girls	Total	Girls	Total	Girls
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	ANDHRA PRADESH	518	87977	42224	18440	8762	5859	2786	87	25255	10907	4335	1742	1136	353
2	ARUNACHAL PRADESH	13	1520	691	2	1	1079	504	3	487	221	1	0	331	153
3	ASSAM	332	38270	17198	NA	NA	NA	NA	80	12058	5048	NA	NA	NA	NA
4	BIHAR	537	104733	39565	15237	5769	8026	3134	138	25486	8089	3707	1179	1933	641
5	GOA	10	1262	608	33	16	0	0	1	762	356	14	6	0	0
6	GUJARAT	148	61463	26566	4356	1843	9081	4076	200	21539	9072	2224	941	2727	1142
7	HARYANA	103	20922	9859	5508	2613	0	0	18	9256	4050	1701	704	0	0
8	HIMACHAL PRADESH	77	6944	3426	1869	855	305	133	12	3515	1674	880	411	106	49
9	JAMMU & KASHMIR	105	8930	3738	858	407	1019	402	31	4057	1520	340	150	264	90
10	KARNATAKA	237	65012	31063	12222	5829	2752	1245	241	24172	10985	4213	1870	1391	599
11	KERALA	68	26604	12928	2787	1344	353	170	30	18121	8746	1921	921	173	82
12	MADHYA PRADESH	869	107730	46588	17388	7475	21082	8717	211	34765	12743	5254	1779	4993	1782
13	MAHARASHTRA	418	118961	57113	13068	6200	11001	5313	222	52642	24404	6483	3076	3443	1400
14	MANIPUR	26	2567	1194	54	26	917	417	6	1130	527	19	9	296	133
15	MEGHALAYA	47	3140	1567	19	8	2490	1248	9	892	459	8	4	709	375
16	MIZORAM	12	1348	639	1	0.14	1265	631	7	461	226	0.35	0.05	457	224
17	NAGALAND	15	2053	991	0	0	2048	989	5	670	329	0	0	667	328
18	ORISSA	421	40800	16890	7580	3580	8970	3160	121	12960	4660	2010	760	2030	800
19	PUNJAB	126	21681	10344	7425	3544	0	0	25	10225	4701	3084	1403	0	0
20	RAJASTHAN	351	72040	25460	12820	4620	8030	2810	148	23140	6310	3470	950	2330	600
21	SIKKIM	5	831	391	48	24	182	87	1	261	131	15	7	55	27
22	TAMIL NADU	308	66697	32269	13116	5975	763	348	55	35939	16638	5681	2563	264	107
23	TRIPURA	21	4524	2066	816	363	1500	641	4	1430	643	224	106	337	133
24	UTTAR PRADESH	945	138557	51090	36206	12704	512	202	207	48250	15151	8771	2228	185	59
25	WEST BENGAL	521	89487	40766	22077	10407	5463	2733	29	28430	11898	5747	2407	1608	545
26	A. & N. ISLANDS	2	402	192	0	0	34	15	1	229	107	0	0	17	8
27	CHANDIGARH	0.48	637	307	155	72	0.17	0.06	0.34	344	166	66	31	0.14	0.04
28	D. & N. HAVELI	1	254	110	5	2	186	87	1	69	26	2	1	49	17
29	DAMAN AND DIU	1	152	73	6	3	20	9	0.22	68	32	4	2	8	4
30	DELHI	27	13244	6306	2695	1228	0	0	6	6231	3304	1069	575	7	4
31	LAKSHADWEEP	0.19	84	38	0	0	83	38	0.04	47	21	0.17	0.07	46	21
32	PONDICHERRY	4	1036	499	204	100	0	0	1	644	306	108	51	0	0
	INDIA	6267	1109859	482758	194996	83769	93017	39894	1902	403534	163450	61352	23877	25563	9675

Source : Selected Educational Statistics, 1998-99, Government of India, MHRD,New Delhi.

Table-2

Estimated Out of School Children

Sl. No.	State/UT	Estimated Values in 1998-99						Estimated Values in 2001					
		Estimated Children in the age group 6 to below 11 years			Estimated Children in the age group 11 to below 14 years			Estimated Children in the age group 6 to below 11 years			Estimated Children in the age group 11 to below 14 years		
		Number	In Schools	Out of School	Number	In Schools	Out of School	Number	In Schools	Out of School	Number	In Schools	Out of School
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	ANDHRA PRADESH	9080	5829	3251	5486	2260	3226	10237	6570	3667	5910	2434	3476
2	ARUNACHAL PRADESH	132	95	37	73	49	24	166	119	47	77	52	25
3	ASSAM	3491	2751	740	1973	1082	891	3783	2980	803	2150	1179	971
4	BIHAR	13424	8464	4960	7597	2404	5193	11342	7029	4313	8432	2668	5764
5	CHATISGARH							2890	2203	687			
6	GOA	177	152	25	98	84	14	159	137	22	103	88	15
7	GUJARAT	5477	4170	1307	3294	2709	585	6102	4647	1455	3369	2770	599
8	HARYANA	2518	1744	774	1438	843	595	2686	1861	825	15202	8916	6286
9	HIMACHAL PRADESH	754	641	113	418	343	75	802	682	120	433	355	78
10	JAMMU & KASHMIR	1117	586	531	622	315	307	1292	678	614	640	324	316
11	KARNATAKA	6025	4801	1224	3658	2645	1013	6732	5362	1370	3728	2695	1033
12	KERALA	3028	2527	501	1903	1795	108	3240	2703	537	1806	1704	102
13	MADHYA PRADESH	9943	7791	2152	5585	2966	2619	7974	6311	1663	6095	3237	2858
14	JHARKHAND						0	3839	2544	1295			
15	MAHARASHTRA	10552	7786	2766	6093	4274	1819	11332	8359	2973	6351	4455	1896
16	MANIPUR	279	258	21	155	140	15	312	289	23	163	147	16
17	MEGHALAYA	270	156	114	150	120	30	3448	199	3249	158	126	32
18	MIZORAM	106	84	22	59	49	10	121	96	25	62	52	10
19	NAGALAND	186	90	96	103	55	48	225	109	116	109	58	51
20	ORISSA	4299	3272	1027	2526	1267	1259	4624	3518	1106	2693	1350	1343
21	PUNJAB	2623	1941	682	1544	1068	476	2798	2070	728	1530	1059	471
22	RAJASTHAN	7075	4029	3046	4020	1911	2109	7882	4486	3396	4340	2063	2277
23	SIKKIM	62	36	26	35	25	10	765	44	721	37	26	11
24	TAMIL NADU	6158	4807	1351	3868	3362	506	6879	5372	1507	3807	3309	498
25	TRIPURA	419	385	34	233	142	91	534	490	44	245	149	96
26	UTTAR PRADESH	21873	10512	11361	12508	5302	7206	23197	11127	12070	13673	5796	7877
27	UTTRANCHAL							1221	898	323			
28	WEST BENGAL	9554	5405	4149	5630	3384	2246	10583	5983	4600	5959	3581	2378
29	A& N ISLANDS	44	38	6	24	21	3	50	43	7	25	21	4
30	CHANDIGARH	98	68	30	55	47	8	98	68	30	57	49	8
31	DADRA & NAGAR HAVALI	21	16	5	12	7	5	25	19	6	12	7	5
32	DAMAN & DIU	14	12	2	8	6	2	16	14	2	9	7	2
33	DELHI	1521	1167	354	845	704	141	1708	1312	396	917	764	153
34	LAKSHADWEEP	8	7	1	6	6	0	9	8	1	4	4	0
35	PONDICHERRY	119	110	9	68	65	3	122	112	10	72	68	4
	INDIA	**120447**	**79730**	**40717**	**70087**	**39448**	**30639**	**137193**	**88442**	**48751**	**88168**	**49515**	**38653**

Method of calculating out of School Children

Out of School children in the age group 6 to below 11 years = (Child Population in the age group 6 to below 11 years) **X** (100-Age specific enrolment ratio for the age group 6 to below 11 years)

TABLE 3

Number of Schools and Enrolment in Secondary and Higher Secondary Classes in 1998-99

(in '00)

Sl. No.	STATE/Union Territory	No. of secondary schools	Enrolment in classes IX-X						No. of Hr. secondary schools *	Enrolment in Classes XI-XII					
			Total		Scheduled Castes		Scheduled Tribes			Total		Scheduled Castes		Scheduled Tribes	
			Total	Girls	Total	Girls	Total	Girls		Total	Girls	Total	Girls	Total	Girls
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	ANDHRA PRADESH	89	10875	4476	1747	662	420	123	2328	7625	2709	486	137	98	18
2	ARUNACHAL PRADESH	1	197	80	1	0.30	124	49	68	77	27	0.43	0.18	44	14
3	ASSAM	39	5558	2459	786	364	1024	429	675	2978	1111	191	74	269	99
4	BIHAR	41	10922	2980	1589	435	826	236	764	4006	853	582	124	282	61
5	GOA	4	387	185	5	2	0.19	0.07	81	237	119	2	1	0.18	0.12
6	GUJARAT	42	9893	3982	901	344	1033	426	1823	3875	1738	297	123	349	146
7	HARYANA	27	4261	1705	539	196	0	0	1052	2329	895	244	77	0	0
8	HIMACHAL PRADESH	10	1834	853	391	176	118	46	497	947	390	141	55	36	13
9	JAMMU & KASHMIR	11	1650	601	125	48	104	31	237	627	233	38	14	33	10
10	KARNATAKA	82	9796	4404	1365	588	462	198	1857	9405	3950	518	147	335	87
11	KERALA	26	10246	5246	1046	547	82	43	524	2569	1356	257	141	12	6
12	MADHYA PRADESH	42	12985	4183	1626	458	1506	437	4137	8135	2629	865	210	753	207
13	MAHARASHTRA	110	22867	9412	3083	1412	1279	474	3489	10691	4423	853	349	411	142
14	MANIPUR	5	608	284	11	4	151	67	72	107	44	4	1	19	9
15	MEGHALAYA	5	323	155	7	3	245	118	36	177	82	5	3	125	57
16	MIZORAM	4	229	115	0.12	0.03	225	113	18	62	28	1	0.01	61	28
17	NAGALAND	3	277	130	0	0	275	129	14	130	55	520	1	129	55
18	ORISSA	61	10310	4180	850	230	700	280	741	4565	1335	120	210	300	100
19	PUNJAB	22	5371	2414	1302	577	0	0	1151	2398	1013	420	166	0	0
20	RAJASTHAN	38	8108	2132	991	201	631	104	1789	4014	1071	426	71	305	37
21	SIKKIM	1	68	32	5	2	23	10	32	38	17	2	1	11	4
22	TAMIL NADU	42	15479	7157	2235	874	99	37	3149	7144	2893	962	306	38	19
23	TRIPURA	4	637	270	97	37	142	50	204	235	88	38	16	27	7
24	UTTAR PRADESH	31	23282	5688	3414	561	86	21	5190	9463	3027	1150	252	37	12
25	WEST BENGAL	51	9851	2983	1913	643	509	154	1599	5644	1317	722	252	141	51
26	A. & N. ISLANDS	0	118	57	0.00	0.00	9	5	44	42	19	0	0	2	1
27	CHANDIGARH	1	177	88	16	8	0.04	0	48	152	81	8	3	0	0
28	D. & N. HAVELI	0.09	24	10	1	1	15	5	6	8	3	0.45	0.19	3	1
29	DAMAN AND DIU	0.20	32	14	2	1	2	1	5	14	5	1	0.33	0.33	0.12
30	DELHI	4	7810	4107	1092	614	5	2	1095	5317	2894	674	362	3	1
31	LAKSHADWEEP	0.09	21	10	0.13	0.06	20	10	4	7	2.70	0.05	0.01	6	2
32	PONDICHERRY	1	321	154	62	30	0	0	61	137	69	17	8	0	0
	INDIA	796	184519	70542	25202	9020	10117	3596	32790	93156	34477	9546	3106	3826	1187

* Includes Degree Colleges having classes XI and XII

Source : Selected Educational Statistics, 1998-99, Government of India, MHRD,New Delhi.