

Vision 2020 - Bringing Rural Communities to Science & Technology

The Report of the Committee on "India a vision 2020" of the Planning Commission released in December 2002 in its summary and overview states as follows:

"Successful education policy forms the bedrock of all fields of national development political, economic, technical, scientific, social and environmental. Education is the foundation for a vibrant democracy, growth of productivity and income and employment opportunities. Literacy must be considered the minimum right and requirement of every Indian citizen. Presently the country has about 300 million illiterate adults. The government's goal is to achieve 75 percent literacy within the next five years. A 100 percent literate India is of paramount importance for realising the greater vision in Vision 2020.

Literacy is an indispensable minimum condition for development, but it is far from sufficient. In this increasingly complex and technologically sophisticated world, 10 years of school education must also be considered an essential prerequisite for citizens to adopt and succeed economically, avail of social opportunities and develop their individual potentials. The current enrolment rate for primary education is around 77 percent and the secondary education about 60 percent. Achieving 100 percent enrolment of all children in the 6 to 14 year age group is an ambitious but achievable goal for 2020 that should be pursued as a top priority.

Increasing enrolment to cover the entire school age population needs to be combined with efforts to increase the quality and relevance of school curriculum to equip students with not only academic knowledge, but also values, & life knowledge. A qualitative shift is needed from routine memorisation to development of children's capacity for critical thinking and from methods that emphasize teaching and passive learning to those that foster active interest and the ability of children to learn on their own".

The UNESCO report, released on 9th November 2005, three years after the above mentioned vision 2020 document, on "*Education for all global monitoring 2006*" takes a view that India will not be able to achieve universal primary education by 2015. Other foreign funding agencies have also repeated the same critical view of the Indian Government though Ministry of Human Resource Development has taken strong exception to this view.

As a matter of fact on both fronts of quality & quantity of education up to class X we have miserably failed and we tend to be leading to a Super power in illiteracy, ignorance, poverty, ill health, unemployment, corruption and debt. About 35 percent of our males and 62% of females cannot read & write. In addition almost 10 crores of our children are not in schools while around 71,000 of our schools have no buildings, 60 percent have leaking roofs, 58 percent without drinking water and 85 percent without toilets. 60 percent of our schools operate with one or two teachers.

Qualitatively most of the students' up to class X cannot read, write or speak proper English the lingua franca used in Science & Technology. Leave aside the rural even the urban children save those in English medium schools are unable to identify with the medium in which most of the sciences have originated & are growing. In India the problem is further

complicated by the existence of innumerable languages, dialects and scripts without any common link language or script. The division of states on linguistic lines have further provided fodder for the unscrupulous politicians to eliminate possibilities of creating a common platform. Emotions run high on use of vernacular, even for the sciences which have originated on a foreign platform, while they are not in a position to take the burden.

Specifically our children in schools are burdened with learning the mother tongue, the national language Hindi and English with possibly three different scripts where mother tongue is not *Marathi* or Hindi both written in *Devanagari* script. Secondly, the script being different for every vernacular language any person from outside state is unable to communicate especially where there is a bias against Hindi or English. Many times practically, speaking English scores over Hindi as a communication language across the state boundaries.

In case of Science communication the situation is further complicated by the insistence of the sentimentalists in translating every English word in vernacular. Thus a *Marathi* nationalist had translated the Railway signal as $\forall f \lambda u j f k \quad \forall k x e u \quad f u x z e u \quad l p d \quad i f a d d k$ No wonder we miss the train while reading the signal.

If we cannot spread the education in English in lieu of vernacular, one of the answers to problem of communication in general and in Science & technology in particular could be, learning the vernacular alphabet in Roman Script. Thus \forall $\forall k$ b $b l$ could be learnt as a, ā, i, ī and d] $[k]$ x $?$ as ka, kha, ga, gha etc. with a key to transliteration and pronunciation.

The transliteration scheme shown above is based on the internationally accepted scheme of standardized diacritical marks for romanization of Indian scripts (developed by the National Library at Kolkata). Such schemes have been in existence for over a century to facilitate international scholars read texts in Indian languages without having to go through the painfully long drill of mastering the local script.

The scheme that is helping the international indologists cut through the "form" aspect (i.e. script) and directly access the "content" must be popularized among the citizens of India also. This will allow anyone in India to read and write any language one is not familiar with and visit any place without fumbling on name plates, signboards etc.

The learning of Roman script with the vernacular language will have the further advantage of ability to read English words used for gadgets, machines, medicines and articles of everyday use. This will help decipher labels, symbols, and nameplates in technical articles used every day, in simple working drawings and National standards. There are many skilled workers in technical field who can work efficiently are conversant with the technical words spoken but can't read instructions in English, & the knowledge of Roman alphabets & Indo-Arabic numerals will be helpful to them.

Especially the Arabic numerals can easily replace the vernacular numerals thus increasing science communication and technology applications. Where do we find vernacular numerals except in panchāngās, page marks in books on literature & poems etc. while Arabic numerals are common in all gadgets like calculators, computers, telephone dials, railway tickets, platforms and almost every where. This will be useful especially to those who discontinue studies after class V.

The Rural community need less of Newton's laws of motion, Einstein's Mass Energy

relationship or even Ohm's law though they are fundamentals in science. Villagers can be taught science the conceptual or symbolic reality thru the graphic and practical reality of working of gadgets, efficient use of machines placing of reinforcement rods as per working drawings, etc. This can be facilitated by keeping the original technical words used like computer, pump etc. but creating ability to read the labels by learning of Roman alphabets and Indo-Arabic numerals from the very beginning of education along with the vernacular scripts if not replacing them as also learning vernacular in Roman alphabets while keeping the phonetics intact.

Science communication to our masses is badly needed to create scientific temper technology awareness and a common sense bereft of superstition. But as sciences did not evolve in India after twelfth century, we should not hesitate in accepting the ideas and concepts in original especially through Roman Script, if not through English and go for reverse Engineering through practical presentation. The acceptance of Roman script & Indo-Arabic numerals in childhood formative stage will connect us to science more willingly.

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