

# Higher Education in India

*R Narasimha*



There is nothing so practical as a good theory, said the great Boltzmann. In our country, it seems to me, we still have no theory of education; we have muddled along for the last 40 years, with assembly, court and Parliament laying down various decrees, often of extraordinary import, and academics usually complaining helplessly about the deplorable state of education in our schools and universities.

To understand why this has happened, we must begin by realizing that education has not only professional objectives, but social and cultural ones as well. Let me explain. There is first of all the need to make good citizens, for without a society that is viable (and a nation that is strong and confident) the other objectives cannot in any case be met. A lack of recognition of this aspect of education widens the gulf between legislator and educator — the former is continually putting out fires ignited by an inflammable system, and the latter is bewildered and frustrated by constant political interference. The professional objectives, which academics are happier discussing — often at great length — must among other things offer inspiration for the creative few, and a satisfying means of livelihood to a large number of others. On the latter point, recall what Gandhiji once said, to the effect that even God dare not appear before a hungry man except in the form of bread; similarly, an educational system cannot afford to ignore the demand for suitable employment by young men and women. Finally education enhances our appreciation of the world around us, the history and the arts that people have created, and the scientific understanding of nature that we have gained over the centuries. Such cultural objectives need particular attention, especially because they lead to benefits that may not be immediately tangible and may on the other hand be easily destroyed.

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A good educational system must meet all these objectives. Is it possible to create such a system? I believe so, for, although no country in the world seems entirely happy with the system it has, we must admit that many have systems more satisfactory than our own. The question therefore is: how can we proceed to improve our system?

A first interesting point is that there is great diversity in the educational systems that different countries have devised for themselves. Thus, at Cambridge you can get a B.A. in “natural sciences” or engineering three years after entry (with three short but intense terms of 8-10 weeks each during the year). In Germany, on the other hand, you need 5 years before you get the first “Diplom” in engineering. In the US you take a 4-year course for a Bachelor’s degree in science or engineering, but you need to spend *at least four more* if you wish to practise medicine. In many European countries the state goes to great trouble to ensure uniform standards, at entry to the university as well as at graduation, whereas the US system allows for considerable variation — the interested public soon finds out for itself which element of the system delivers what. In spite of this loose regulation in the US, however, it is universally recognised that their (post-) graduate educational system is about the best available anywhere.

What does this tell us? I think the chief conclusion to be drawn is that, while certain professional standards must of course be met by any national system, there is a lot of room for variation, i.e., for tailoring the system to the social and cultural needs of each country. During the last two centuries, Europe and its educational system have often been driven by imperial ambition (the motto of Imperial College stands for Science as Shield of Empire), and our own (with its extraordinary emphasis on English, geography and such other subjects in school) by the British need to manufacture clerks and other functionaries to run their Indian empire. If we sweep aside these colonial cobwebs, what kind of system would we need to devise for ourselves?

There is great diversity in the educational systems that different countries have devised for themselves. This suggests that there is a lot of room for tailoring the Indian system to the social and cultural needs of the country.



If we agree that our educational system should meet our cultural and social needs, we should begin by examining the peculiar aspects of the Indian scene. The most important of these are, in my view, an extraordinary cultural diversity, a social stratification that has deep historical roots and has left the vast majority of our citizens disadvantaged in many ways, and a strong and ancient tradition of formal learning among a minority of the population. There is not enough space to argue in detail in this column precisely how these factors should influence the design of our system, but let me state conclusions that appear obvious to me.

- *Do not attempt a uniform system all across the country.* In a society where the ideal (as defined by Gandhiji again) has often been that each man should be left free to design his own religion, can we succeed in making an effective educational system that is uniform? The US has already shown us how a diverse system can be managed quite effectively.

- *Declare that every citizen who meets certain minimum entry level qualifications has the right to university education.* If (as already pointed out) the vast majority of our people feel that for centuries they have been disadvantaged — socially, culturally and economically — and many of them see education as a social passport, I think their feeling is entirely legitimate, and should be *encouraged* (incidentally taking the opportunity to produce good and productive citizens for the republic: that is the task of the political and educational leadership). However, this problem is now being tackled by a cumbersome system of reservations and quotas, decreed by the politicians and judges of the land; educationists have no voice, because (I am sorry to say) we have refused to analyse it as *our* problem.

Indeed, our educational scene today is resonant with a culture of poverty and scarcity: it has what may be called a ration-card mentality, and reminds me of the situation in the country regarding food till the seventies. (Those old enough to have lived through those times will recall how uncertain the availability of

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food was: the prudent and well-off hoarded grain and kept access lines to their rural sources open — just as they now save money and keep educational lines to the US open — while government made elaborate rules for *equitable* distribution, promptly circumvented by an ingenious public.) Fortunately the green revolution changed all that: although not everybody is still well-fed, far fewer people starve or hoard grain, and you can buy rice at either a few rupees a kilo or a hundred, depending on what you need or can afford. A similar revolution has to occur in education, with a wide variety of courses designed to suit different aptitudes, abilities, cultures etc. I cannot understand, for example, why there are not a large number of three-, or even two-, year degree courses whose objectives would be to : (i) prepare each student for suitable employment, (ii) make her or him a good Indian citizen, and (iii) enhance her or his appreciation of cultural pursuits, from her or his own or other parts of the country (or world), in such fields as languages, literature, philosophy, music, dancing etc. (not excluding science!). This could be a good pattern for an Indian-style liberal/vocational education, which may appear to be a contradiction in terms in the West but will suit our cultural traditions very well for even the disadvantaged Indian often has hidden cultural strengths that this counterparts elsewhere in the world generally lack; but our educational system does not appreciate this, because (I believe) the ghost of Macauley, with his grotesque contempt for all forms of Indian learning, still haunts our academic corridors. Of course such initiatives will require money, but there is no alternative but to find it; after all we now spend only a little more than 3% of our GNP on education, and doubling it would not at all be too much to ask or do, and would only put us roughly on par with other societies. My friend Prof K Krishna Prasad has recently computed that, even after taking purchase power parity into account, the Netherlands spends ten times more in real money per pupil than India does.

The point I am making is that while academics tend to view equity and excellence as conflicting objectives (defining the latter rather too narrowly), and specific institutions may strike their own

### The Prescription

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Make the system flexible.

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We have a passion for stamping people in India: at every stage in one's life, beginning with birth, and going through school, college etc., society is stamping one's 'passport' and putting its *gurtu* on it, and telling us what we *can't* do later on.

balance between the two, there is no question that the national system must provide for both; furthermore I believe it can actually be done quite well, provided we suit the system to our cultural ethos.

● *Make the system flexible.* We must now have one of the most absurdly rigid educational systems in the world. At every stage in one's educational career, doors are being shut, rather than opened; you choose this option, you can't become a doctor; you choose another, you can't study mathematics; you choose a third, you can never become a historian. Why? We can cite any number of the most distinguished and creative minds in the world who started out to learn something, but found that what they wanted was rather different. The prospectus of Cambridge University tells potential applicants for admission: "You can arrive in Cambridge expecting to become a physicist or zoologist, and emerge after three years as a metallurgist or a psychologist". Unfortunately, this cannot happen even in the best universities or institutes in India today. Why? We cannot blame the politicians for this rigidity; it is there because we teachers want it. It is almost as if we have a passion for stamping people in India: at every stage in one's life, beginning with birth, and going through school, college etc., society is stamping one's 'passport' and putting its *gurtu* on it, and telling us what we *can't* do later on. Can we not liberate ourselves from this system?

All of us know students whom we considered mediocre in India, but who blossomed into confident, productive, and sometimes distinguished personalities in the US. If so many students hanker after going to the US, one reason is of course the promise of a green card and eventual prosperity, but another very strong one I believe is the sense of liberation they feel once they are out of the clutches of the Indian system.

Now education in science, which is the major concern of this journal, will also (I believe) have to take into account the kind of



factors mentioned above. On the one hand it must nurture that small number of precious and extraordinary people who, in their pursuit of truth and beauty will create the new science that will be part of our culture (or even commerce) in later years; on the other hand, the system must also enable the vast majority of others to secure a decent and satisfying career in the ever-changing world of modern technology. As the bigger social and cultural problems associated with education in general get tackled effectively, we will be in a far better position to devise a more satisfactory system for science as well, recognizing that science is understanding, but that it is also power.

In fact the Academy Paper on the subject (*Current Science*, 1995, 68:255-267) already offers many excellent suggestions (including a three-stream Bachelor's programme in science), and a specific course of action. It is time that scientists (and other academics) start reexamining the fundamental basis of our educational system (not hesitating to look at radical alternatives), and so regain a sense of control on what they teach to whom, and how.

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*Address for correspondence*  
R Narasimha  
Indian Institute of Science/  
Jawaharlal Nehru Centre for  
Advanced Scientific  
Research,  
Bangalore 560 012, India.

