# Knowledge Creation

## Higher Education as Primary Goal

By J V NARLIKAR

THERE are any number of verses in Sanskrit extolling knowledge and education, how they are assets and how they enhance an individual's value as a human being. They indicate the important role education had in an individual's overall make-up in the 'good old days'. Of course, judging by old accounts not everything in the good old days was really good. But on the value of education there should be no argument.

A look today at the educational scenario shows higher education being missed out in the order of priorities. At one end is literacy and primary education, always demanding urgent attention and forever falling behind set targets largely because of a growing population. At the other end are the elite institutions of research, mainly in science and technology, which have enjoyed a favoured status ever since Independence. In between, the universities and colleges of higher education have fallen behind.

It is interesting to note that most national institutes today are finding it difficult to attract talented youngsters. The lifeline to survival and growth of scientific research is getting steadily tenuous. This was apparent in a recent discussion of the Astronomical Society of India held in Pune to project the growth of astronomy in the coming decade. Although numerous ideas were on the agenda, most of the discussion centred round the worry as to where the next generation of astronomers will come from. And this worry is not limited to astronomy but extends to other basic sciences as well.

Why are good students not attracted to research in science? In hindsight one may say the reason is the steady neglect of the university sector in post-independence India. Most of the research in science was concentrated in the autonomous research institutes run by the various scientific agencies like the CSIR, DAE, DST, DRDO, DOS, etc. and these institutes were sited outside the universities. Thus the message was that universities had best confine themselves to teaching while the research institutes will look after research.

Now this bifurcation meant that it was hard for university academics to do research while it became near impossible for institute scientists to have access to undergraduate or even postgraduate students. Unlike a university campus in the US or the UK, where because a faculty member teaches students as well as does research, a student sees exciting research done in the department, our students typically see overburdened teachers somehow completing their teaching assignments. A faculty member in a US university may have exciting research to report from the Fermilab accelerator or the Hubble Space Telescope, something which can enthuse and motivate an undergraduate.

In this context, the fact that the panels constituted for the decadal vision meeting of the Astronomical Society of India, contained only one member drawn from a university, out of a total of 37 speaks for itself. How can the vision be transmitted to the next generation which is to be found in the universities only?

It is against such a background that it is refreshing to see some new thinking going on for rejuvenating higher education in general. The University Grants Commission, in a document prepared by its vice-chairman, has come up with a conceptual framework of what needs to be done in the forthcoming five-year plan. The document notes that in the last decade, a well-trained Indian graduate has been much in demand and that India is beginning to be seen as a nation with the potential of providing 'knowledge creators' to the world.

**IN BRIEF**

- Higher education in India does not get the priority it deserves
- Universities confine themselves to teaching; they do little research
- Our scientists should emulate those abroad who lecture to undergraduates to enthuse them

As usual, the numbers cited in the document are staggering. If the present system of higher education is allowed to grow in the natural way, there will be a student population of 11.7 million by the end of the tenth plan. If, however, conscious efforts are made to make higher education accessible to ten per cent of all population in the same age group, instead of the present nearly seven per cent, then the number may rise to 12.9 million.

Whichever option is adopted, the numbers are enormous. The document, therefore, suggests widening the strategy to take the maximum benefit of distance education, which is becoming more user-friendly, thanks to the IT-revolution. The conventional academic structure also needs to be expanded to include retired teachers on contract, rely on resource persons from outside the university sector and using double-shifts where necessary. It will be necessary to break the rigid compartmentalisation of what subjects one may offer in what course, and permit a modular approach.

There are several other aspects of the issue. How does one raise enough money for higher education? Attempts to raise university fees to realistic levels lack political will and so the fees remain extremely low. A figure quoted is that less than five per cent of the total revenue of a central university comes from student fees. A typical psychological reaction to any product obtained cheaply is to not take it seriously.

It is clear that research needs to be actively encouraged in a university by creating a research council to fund projects. Expensive research facilities could be centralised and shared, as is common even in developed countries. The UGC has already set this trend by creating inter-university centres. There is surely need for expanding this mode.

The document needs to be studied and debated by academia and the administrators. Not all its suggestions may be considered practical, given the present constraints both of resources and of mindset. So far as resources are concerned, the goal of six per cent of GNP for education is still to be attained, and higher education rightly deserves a just share of any additional kitty available.

However, mindsets need to be changed. Take for example, the idea that scientists in a national lab should teach in the neighbourhood university or college. Despite examples of top class scientists like Richard Feynman, Subrahmanyam Chandrasekhar, Paul Dirac or Fred Hoyle who lectured to undergraduates and enthused them, it will be difficult to persuade many of our scientists to emulate them. Or consider the idea that in a resource-sharing spirit an inter-university centre may provide expensive centralised facilities to university academics. How many vice-chancellors will allow visits by their faculty and students for usage of these facilities?

However, one gets the feeling that it is now or never for higher education: If we miss this opportunity of creating new pathways for it to flourish, it will go on languishing and we will lose a very valuable national asset.