

## The Academy document: A perceptive appraisal of science education in India

This is in response to the article entitled 'University education in Science' published in *Current Science* (10 February 1995), which emphasizes the need of an effective national policy on science education and research. The Academy paper is timely specially, because, of late, there has been considerable debate on the proposal made by a nonresident scientist, S. Mahajan, to set up a National Science University (NSU) in Delhi. The proposals included in the Academy document, unlike those in NSU, appear to be realistic, goal-oriented and remedial as regards attempts towards improving the overall status of science education and research in India.

The second part of the report that documents Academy initiatives is laudable and unique. The recommendations made under subheads such as 'efforts by the Academy through the fellowship', 'interaction with student and teacher communities', 'link with teaching departments and institutions' and 'contact with national bodies, agencies, etc.', if implemented properly would indeed elevate the level of education in science. However, I am of the view that the panel while making recommendations has avoided important issues that may have a bearing on the successful implementation of the Academy proposals.

The panel which has prepared the draft is surprisingly silent on the issue of what the medium of instruction in science education should be. In some part of our country science teaching at undergraduate (UG) as well as at postgraduate (PG) level is conducted in the vernacular. For example, at PG level in biology, when a teacher starts talking about the pituitary gland in a classroom, one should not be surprised if he finds a couple of blank faces staring innocently expecting to know the meaning of the pituitary gland, or in a physiology class a student might gather enough courage to ask, 'Sir, can you explain what do you mean by kidney?'. I am sure none

of the Academy panelists has ever faced such a situation in a PG lecture room. Only a single line '... production of science programmes using the electronic media, possibly also in regional languages ...' has been written in the form of a recommendation on this issue under the heading 'Academy initiatives'. The students usually do not have the ability to comprehend science literature, which is mostly published in English and one can only imagine the situation when one of these students graduates and becomes a teacher. We must think of the ways and means to break out of this cycle, which is a major cause of deteriorating science education. It is, therefore, better if we do not talk about equity and excellence prior to formulating a consensus national policy on the medium of instruction for science education. The English language has been widely accepted all over the world as the language of science. Why should we not openly and boldly recommend English as the medium of instruction starting at least from the UG level throughout the country. This will definitely help elevate the level of science education and research in our country.

The existing age-old examination system is absolutely poisonous for the growth of science. The way the theory and practical examinations are conducted is extremely dangerous. In fact, science students have become habituated to go into orbit effortlessly. Objectivity in test procedures should be brought in and somehow the feeling of 'great' about science subjects should be infixed into the minds of science teachers as well as students. Furthermore, it is well accepted that the absence of accountability makes the examiners extremely casual and callous while examining the answer books. A transparent examination system may be helpful in alleviating the distrust of the student community in the system. On demand, photocopies of the answer books may be provided to the students.

This procedure would definitely induct accountability among the examiners and would make the examination system much more credible.

In specific areas like biology special problems exist. Students of biology get their M Sc/Ph D degrees mainly in subjects like botany, zoology, biochemistry, bioscience/life sciences. There are many more, such as microbiology, biotechnology, physiology, genetics, environmental biology, etc. However, in some states step-motherly treatment is accorded to the students with Master's degrees in Biosciences, Biochemistry, etc., by the concerned Public Service Commissions (PSCs) at the time of recruitment of lecturers for hundreds of colleges, where only botany and zoology are taught. The University Grants Commission (UGC) favours introduction of new courses but never cares to protect the products. This cold war between the UGC and the state PSCs has been continuously ruining future careers of hundreds of students every year. This type of discrimination may dampen the spirit of those science students who opt for new branches of biology, thereby rendering modern aspects of the subject less attractive.

The Academy while constituting the panel should have co-opted some members from state universities, remote universities, and colleges. I feel that the Academy panel itself is totally skewed and has 7 out of 11 members from Bangalore alone. The technique of random sampling for the nomination of panel members may have been more fruitful in pinpointing the real problems faced by thousands of science teachers spread over the length and breadth of this vast country.

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