

that faculty gain favours out of turn and merit. Teachers are part of the system which has become corrupt. If the teachers decide to be fair to themselves and to others and accept no favours, the government and the politicians will have to think twice before they intervene in any matter regarding the universities.

University teachers are part of intelligentsia of the society. Who else shall we expect to have a positive and corrective attitude? If the government is aware of the academic calibre and general righteousness of the teachers in the uni-

versity, it will hesitate to impose a non-academic and inferior VC on them. Interference with our university system is a vicious circle that has to be broken by the persons who belong to the system and who suffer.

The most useful suggestion by Rao¹ seems to be the splitting of UGC into College Grants Commission (CGC) and University Grants Commission. Though the CGC is operating in some of the states, it has to be on a central level to strengthen teaching and raise the academic level of the colleges. This fact will prompt the government

to make better appointment for the VC's post, academically and administratively.

1. Rao, A. S., *Curr. Sci.*, 2001, **81**, 1391.
2. Virk, H. S., *ibid*, 628–629; Basa, D. K., *ibid*, **80**, 1364; Gupta, D. P., *ibid*, 2001, **81**, 1511.

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Why beat around the bush? It is time we took some risks to attract young ones to science research as a serious career

I was a bit perplexed by the recent comment of H. S. Virk (*Curr. Sci.*, 2002, **82**, 8) that the laboratory facilities and opportunities are not limiting for pursuance of physics by youngsters while reacting to P. Chaddah's (*Curr. Sci.*, 2001, **81**, 868–869) suggestion to encourage physics as an avocation or a hobby. Virk had, not long back (*Curr. Sci.*, 2000, **78**, 659), expressed that it was the job situation that was the culprit, and that Western culture was doing the damage to our spirit. I wish to point out that when we look for causes elsewhere, not on home grounds, such contradictions are inevitable. Chaddah's proposal, however, would also be sterile if implemented because chances are it would remain unused, not because there are no bright ones who might like to pursue physics as a hobby, but because the young ones, howsoever bright,

would be looking forward to good and inspiring teachers, not providers of facilities. How many of our award-winning young scientists have succeeded, *if they have tried at all*, in inspiring even their own children to take up research in science as a serious career? Even a crude survey would be an eye-opener.

The debate will go on endlessly without making the slightest dent anywhere until we *analyse our own role in setting the house in order and actually act when the need arises*. Unfortunately, most do not like to act because of apprehension of the heat that could be generated and, in the process, may leave scars on our cozy career that we look upon as a 'job'. But if we sincerely want a change, the risks have to be taken to set our house in order. Is there, really, any easier way out? Debates

would help only to enlighten us about our own role and stimulate in generating a value system that will sensitize the scientific community to protect such risk-takers from going to oblivion. Such individuals might succeed in shaping future role models, of a different quality than what exist today in our profession in India, who would, in turn, inspire the next generation to excel individually or as a team. It is certainly a long path, but perhaps the target would be achievable if the debate remained focused on our own role to begin with.

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Science and technology policy documents

I am happy to see that the editorial (*Curr. Sci.*, 2002, **82**, 5–6) expresses concerns on the issue of science, technology and public perception. But, I am afraid the issue is complicated by the perception which I feel needs to be corrected.

Yes, we have traditionally drawn dividing lines between science and technology (S&T) but the government policy statements have not. The editorial refers to the 'Science' Policy Resolution of 1958 as being a science policy. This is incorrect. The title of this docu-

ment (which has been quoted incorrectly) is 'Scientific Policy Resolution' (SPR). It is not merely a question of semantics. Homi Bhabha and Jawaharlal Nehru (believed to be the authors of the famous SPR document) were concerned with lack of understanding and the en-

tire approach of the people of India to developing and using S&T for the benefit of the nation. It is in this context that, as quoted in the editorial, there is a reference to the duo in the SPR, when it says, 'technology can only grow out of the study of science and its applications'.

It is this concern for development of science and the use of technology that is reflected in the popular cliché of developing a 'scientific temper' which is to that extent, the essence of the SPR document. The need for developing the much-needed scientific manpower (scientists and technologists) in the country was also the concern expressed in the SPR. Now let us come to the Technology Policy Statement (TPS) of 1983.

Twenty-five years after the pronouncement of the SPR, the high-level government body, National Committee on Science and Technology (NCST), wanted to review the status and relevance of this document on S&T, in the context of changing times. It was the period when the policy of 'self reliance' was being enunciated forcefully by the then Prime Minister, Indira Gandhi. The committee came to the conclusion that the visionary SPR document was still relevant and no change was required. It was, however, felt that in the context of self-reliance and with concerns for environment and unemployment, one would have to look at the development of technology in new light and come up with mechanisms for implementing some of these concerns for development through the use of technology. The concerns for 'benefit to the people' expressed in the SPR needed to be translated through specific action plans. Out of this approach came the setting up of the Technology Development Board under the DST and other mechanisms relating to technology development. To that extent, the TPS does emphasize the role of technology. But it will be wrong to say that the SPR only focused on 'science' and that the government looks at S&T with different policy framework. Incidentally, as far as I know, the SPR was a document that was approved by the Parliament as a national commitment to S&T while the TPS was a national document released by Indira Gandhi at the Annual Session of the Indian Science Congress.

With the changing times, the phenomenon of globalization and economic reforms has toned down India's emphasis on self-reliance and to that extent the importance of the TPS is lessened. However, concerns for the environment and energy expressed there are still relevant today. On the other hand, the importance of the SPR is very much the same as at the time of its approval by the Parliament. We should remember that we were always talking of the 'scientific' approach to development and not just recommending doing science for the sake of science, as the editorial tends to give the impression. I think the perception among the scientific community should be guided by the correct interpretation of the SPR.

Unfortunately, use of the words 'science' and 'technology' is very often put into two different camps. The Indian Institute of Science certainly deals with technology areas like metallurgy, chemical and electrical engineering. So also the IITs deal with laser physics, and chemical sciences as well with mechanical, electrical and chemical engineering. The world-famous MIT certainly encourages excellence in science. When we bemoan that students are not taking careers in science, we are equally concerned about students not pursuing applied areas other than IT.

Current Science should take up the concern which the Indian Academy of Sciences initiated more than five years ago about lack of emphasis on science teaching in our higher education system, and that there are no serious takers for science. The report of the academy had also pointed out the dismal impact this would have on Indian science (and technology) in the coming years. Shortage of manpower in coming years for agencies like the atomic energy, space, defence research and even for faculty positions in the IITs is a major concern for our society. Can *Current Science* start a debate on 'Are there challenging (and rewarding) careers for our young science students'? Certainly, the young students, and more importantly their parents, would like to know.

Apart from bemoaning and criticizing the young students for not choosing science as a career, the scientific community and the government must ask themselves, 'What can we do to attract

the young to science'? The usual government schemes of scholarships may not be the only solution. We have to look at the issue of marketing (the bad word not liked by the academia) science careers. Yes, unlike the fifties and the sixties, students do not choose science for the sake of its wonder, excitement, etc. They are looking at the 'pay packets' that are offered and the prospects of their growth in a career that will offer good working conditions, more freedom and encouragement to work hard. Parents are equally tempted to see their children opt for seemingly more lucrative jobs. Scientific agencies are perhaps not in a position to aggressively compete in the job market, but then the result will be, as someone in the defence laboratory said, 'We get monkeys because we give peanuts'. Scientific agencies still depend upon the government approach of advertizing with the age-old unattractive rigid pay scales. Scientific agencies (mark that word 'scientific') need to evolve new hiring policies like those of the private sector. I understand that there are some attempts at campus recruitment, but the pay-packets (the important criterion used by the youth) are still meagre. Homi Bhabha worked hard to evolve a new mechanism for running scientific agencies within the government framework, so that the government could support but not control the scientific departments. I am not sure whether that new mechanism is still operating. But we certainly need a new mechanism to 'hire' young scientists and retain them within the system. Is there a Bhabha in the offing among our young scientists? But perhaps we need a new Nehru too! Anyway, let us debate this important subject of 'careers in science' and see if the scientific community can come up with some novel approaches. Let us not just criticize the young for not choosing science; let us try to attract and woo them to science.

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