

## National Knowledge Commission and higher education system

The real meaning of education is to impart knowledge. True education would provide children not only an intellectual stimulation, but also a real purpose in life. This is totally different from the attitude of the Western world, where employment generation is given more importance. In the fast-changing global scenario, there is urgent need for an integrated and balanced education system which not only helps students to develop their personality, but will also result in a well-qualified, skilled human force. For this, active cooperation of the Government and the masses is needed.

The National Knowledge Commission (NKC) was founded in 2005 with the main purpose of establishing a knowledge-based society. It is pertinent that the vast, developing youth population should recognize its importance in global economy. At present, about 10% of students between 17 and 23 years of age is opting for higher education; it is planned to increase this to 15% by 2015. However, one has to maintain quality as well. It is a sorry state of affairs that 50% of the children in government schools between 8 and 14 years of age cannot read a simple para, while 65% of them cannot do a simple, two-digit multiplication<sup>1</sup>. Only with improvement in school education, can India become a knowledge-based society. Education is the birthright of every child, but it is pity that about 30 million children out of 200 million in the 6–14 years age group are deprived of school education, and about 80 million who have taken admission in primary schools quit study midway. School education can build a foundation for national

development, while higher education plays an important role in shaping economic and social development. The need of the hour is to establish an influential body, with no bureaucratic hindrances. For this, NKC has recommended an independent regulatory body for upgrading the higher education system.

Institutions like the IITs, IIMs and IISc have their own importance in professional education. But the vast population of the younger generation should derive maximum benefits from higher education. NKC has recommended achieving a GER (gross enrolment ratio) more than 15 by 2015. The moot point of the recommendation is to have about 1500 universities by 2015, to upgrade the quality of higher education. No doubt, we are not up to the mark in quality, but yet produce 2.5 million graduates every year. Many of our universities lack proper funding and rigorous monitoring. Also, there is political interferences, and a decline in the quality of the faculty, which are detrimental to higher education. The need of the hour is to create good teaching and research facilities and make the teaching profession more attractive<sup>2,3</sup>. Universities are the key in driving economic reforms in facing the challenges of economic global competition, and the restructuring and reforming of our existing system must accompany the process of expansion<sup>4</sup>.

Recently, the Joint Science Education Panel<sup>5</sup> has reported that only if our younger generation gets opportunities for an all-round, good education and training in S&T, will the country become a leading knowledge power in the coming years. In

this direction there is a need to develop science education, and research and training. As correctly pointed out by the Panel, the present state of higher education institutions is not up to the mark to generate the quality required for the nation to become a global power in the education system. Although we have made a big stride in science by reaching the moon, we need to do much more. NKC in its recommendations, besides others, has emphasized clubbing graduate degree with other professional streams so that more students will be attracted towards pure science. However, NKC should ensure that all science subjects must have good laboratory manuals and trainers, and give more emphasis on research methodology and training skill, so that a skilled and dedicated 'science force' may be ready to take up challenges of the new millennium, thus helping in building a quality national force.

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5. Joint Science Education Panel (IASc, INSA, NASI), *Curr. Sci.*, 2008, **95**, 1411–1420.

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## NET (CSIR–UGC) examination scheme in life science needs to be revised

The enormous potential for India to become a leading knowledge power in the coming years can be realized only if our younger generation has opportunities for all round good education and training, especially in science and technology. Unfortunately, however, the present state of higher education in the country is

rather poor. In order to make it more relevant to the changing needs of the society and thus to propel India to a position of leading knowledge power, we need massive investment as well as planned radical changes in our higher education system<sup>1</sup>. We have lost focus and clarity in the fundamental objectives of teaching

and research. Research and teaching based on a limited understanding of the subject, that is being practised in most universities, laboratories and institutions hamper standards of research. In addition, an outdated examination system has further eroded. Barring exceptions (some institutions as well as individuals), by and large,

many of our teachers, even at the highest level, are woefully outdated about the contemporary frontiers of knowledge, even in their own fields; they do not make any special effort in improving their teaching skills and methodologies. Due to such a faulty system, the present generation is neither able to contribute in any significant way towards new concepts or ideas, nor undertake any original work, and students fail to develop innovative and original thinking. They are forced to develop such faculties that suit the current examination system<sup>2</sup>. One of the critical factors affecting the quality of universities and institutions imparting higher education, is our inability to attract and retain talented persons in the teaching profession and furtherance of research in the university system. On 15 December 2008, the Cabinet had approved a higher academic grade pay of Rs 6000 for all assistant professors at the entry level, so as to make it more attractive compared to the entry level grade pay for the Civil Services and other professionals

under the Sixth Central Pay Commission. A pre-selection screening process to identify candidates who have the basic aptitude and interest in the teaching profession may, to an extent, help in getting better teachers. In accordance with new developments and advancement in the field of life sciences, the CSIR-UGC has revised the syllabus of NET examination. It is comprehensive and well integrated with basic as well as applied aspects of biological sciences like botany, biotechnology, microbiology and zoology. But there is some scope for improvement of the examination scheme, for better screening of teachers and research scholars in future.

1. In the present scheme of examination, out of 39–45 questions requiring descriptive answers, the candidate is required to attempt maximum of 15 questions; this provides internal choice up to 70%. To ensure 50% internal choice and equal importance to each section, there should be one descriptive question from each section with internal choice.

2. To maintain standard and quality of higher education in the country, NET should be essential for appointment of teachers in the universities/colleges. State-level eligibility test should not be treated equal to NET.

3. Course contents related to research methodology must be included in the syllabus. This will help in developing research aptitude/temper among the young generation who opt for teaching and research as a career.

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## Yes, scientists also need money

I read the correspondence by Chaturvedi<sup>1</sup> entitled 'Do scientists also need money?' with great interest. I also belong to the same era as Chaturvedi, and it may be of interest for the readers to know what another ripe old man has to say about the question.

I agree with Chaturvedi that scientists (as implied by Chaturvedi, the term 'scientist' is used in a generic sense; it includes teachers and researchers in science and technology) do need money, not only for a secure future, but also for present comfort. Let scientists make it known that they cannot be taken for granted. They should stop doing free additional jobs and should fix norms for honorarium for every such job. One exception could be that of reviewing a research paper for a scientific journal, provided the journal does not charge money from the authors. In this connection, let me cite some instances from my own experience to illustrate how various agencies, including universities, treat scientists.

About a decade ago, I received an invitation from a well-established and well-known Central University for exam-

ining an M Tech thesis with an honorarium of Rs 50 only. I promptly returned the thesis at my own cost and wrote a letter to the Vice-Chancellor, politely asking him to come to senses. Naturally, there was no response!

In a recent invitation from another relatively younger Central University, I was invited to examine a Ph D thesis. The honorarium bill required an undertaking on my part that I would declare this income in my income tax return! On the one hand, the University expects the examiner to give a fair assessment of the thesis, and on the other hand, it suspects that the examiner may not be honest enough to declare the income in his tax return. Needless to say, I declined the offer mentioning the reason explicitly. To the best of my knowledge, there was absolutely no effect of my letter on the Vice-Chancellor or the administrative machinery of the University.

Long ago, I was invited as an expert for a selection by a Central Government Ministry. There was no honorarium; even the actual taxi fare was not paid. I was told that I would be paid road mileage

allowance in due course. And to make things worse, an amount less than one-fourth of the actual taxi fare was sent to me by money order and the postal commission was deducted from the computed amount! I refused to accept the money order and wrote a letter to the concerned official in not too sweet a language. As usual, there was no reaction.

In the first meeting of an important committee of another Central Government Ministry, I was given a nominal sitting fee and a travelling allowance calculated on the basis of road mileage. The total amount barely met my actual taxi fare. Again, I had to decline the unkind offer and wrote to the concerned officer, with copy to the Chairman (who, incidentally, was a high-profile retired judge). Nothing happened, as expected. Despite my resignation from the committee, I continued to receive the agenda and minutes of the meeting for more than two years!

Unfortunately, the salary scale of scientists is decided by a Pay Commission, which is dominated by bureaucrat members. The latter look after themselves