

Institute of Technology²! So, will it be necessary for students who wish to escape the tedium of some of the current Bachelor's courses to subject themselves to topics they have no talent and interest in? Would more choice help the situation?

Another point of view can be borrowed from Amartya Sen, who, in the context of primary education, has commented that a bad education is better than no education. Will even a poorly understood, or meagrely enjoyed, Bachelor's

degree in the multiple disciplines be better than the monolithic programmes commonly encountered in the country today? For an answer we may have to wait for a few batches of students to complete their degree programme.

1. Joint Science Education Panel, Appendix III of the Position Paper on Restructuring post-school science teaching programmes', Indian Academy of Sciences, Bangalore, October 2008,

2. Feynman, R. P. and Leighton, R., *Surely You're Joking, Mr Feynman (Adventures of a Curious Character)*, Vintage, 1992, p. 36.

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When do we learn to properly advertise a post?

How well qualifications and job specifications are mentioned for a post in *Nature* and *Science*. For positions involving teaching, candidates are asked to submit a detailed teaching statement and philosophy, from their past services and for the future. The theory and laboratory courses to be taught and developed at various levels, viz. UG, PG, majors, non-majors, etc. semester-wise are clearly stated. Candidates are asked to mention their career objectives. On the research side the expertise required, areas to be developed, approaches to be used, technical and instrumentation skills required, goals to be accomplished, involvement

of UG and graduate students in the research programmes, etc. are clearly stated. Further, even attitudinal requirements like unflappable temperament, impeccable interpersonal skills, commitment to UG teaching, quality of mind, etc. are mentioned. The responsibilities of the candidates and division of time and labour towards various activities like actual benchwork to be done, teaching of courses, supervision, etc. are indicated.

Another important component of foreign advertisements is that they also mention, right in the advertisement, what the institute is going to offer to the selected candidate in terms of office and labora-

tory space, equipment, start-up funds, annual operating budget, personal administrative support, etc.

In striking contrast are advertisements in our media, which are too flexible. As a result, candidates from a wide variety of backgrounds stake a claim. It is high time that apex bodies give necessary instructions to universities, etc. to advertise posts with clear-cut requirements.

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Earth science technology courses

The editorial by Balaram¹ on 'The science of the earth' encompasses, compelling demand to replace earth science classical and traditional study with modern scientific concepts. His concerns are: few takers; work of the National Institutions most often does not seem in tune with international mainstream community; present scenario is a matter of serious concern; sudden emergence of meeting ground for a diverse array of interest groups, etc. Hence, modern programmes in our best institutions are worth considering. The well-articulated reawakening call of Narasimhan² on 'Dimensions of earth education', had succinctly enumerated and reiterated various facets presently relevant to India, with special emphasis on earth education. Ramana-

murthy³ has outlined 3D mapping at great depths by observing geological processes in real time, under the auspices of the Earth Scope Project, funded by the US National Science Foundation (operational by fall 2008).

Earth sciences is a natural science. Ever since civilization started humans have been observing nature's variations along with its manifestations, and the utility of this treatise which has been put to use since then. That is how, for example, based on surface reflections of anomalous variations, several mineral deposits were discovered and exploited. Such 'old workings' serve as direct indicators for geologists of the modern era. Ancient Indians had also developed appropriate technologies in mining, min-

eral processing and metallurgy. In due course of time earth sciences was christened as 'geology'. However, the fundamentals were based on traditional observation of nature.

Not being a pure science, the scientific foundation of geology was laid with the application of the doctrine of basic sciences as enunciated in physics, chemistry, botany and zoology. Further, in-depth, need-based applications had given birth to various sub-disciplines like geophysics, geochemistry, geobotany, including palaeobotany and palaeontology. Application of engineering expertise and technological adoptions is helpful for practising professionals. The major prospecting 'old working' surface indicators have almost exhausted. Hence survey of mineral