print analysis and odontological examination, anatomical and anthropological methods such as identification from the tattoo marks, moles, scars and cuts on the body, deformities in the body and bones through radiographic methods, superimposition methods of identification, and comparison of footwear and other personal articles and objects which the deceased may possess. All these methods may assist in the analysis and identification of the deceased on the basis of comparison of the ante-mortem and post-mortem records available to the team. Sometimes, sophisticated techniques such as reconstruction of the face from the skull may be employed successfully for identification of the deceased.

There is a need for creating a community for disaster science comprising interdisciplinary disaster scientists who can cope with the challenges brought about by both man-made and natural disasters, soften or diminish their impacts, and may also help in improving the policy-making mechanism[3]. Thus, the community for disaster science should include experts from the specialities of forensic pathology, odontology, anthropology, human health, toxic chemistry, geophysics, ecology, atmospheric science, oceanography and the social sciences for a successful disaster management and DVI process. The Scientific Working Group on Disaster Victim Identification (SWGDVI) is a focus group in this regard that was developed by the FBI with the help of the National Institute of Justice (NIJ), USA. There is an urgent need to develop similar focus groups or communities in different regions worldwide for effective DVI management, especially in the developing countries that are prone to disasters and still suffer from poor infrastructure and lack administrative facilities to tackle these issues.

1. Mishra, S. R., *Nature*, 2015, **524**, 35; http://www.nature.com/nature/journal/v524/n7563/full/524035c.html
2. Britto, D., *DNA News*, 24 December 2014; http://www.dnaindia.com/world/report-10-natural-disasters-that-shook-the-world-in-2014-2045415
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Some drawbacks of the higher education system in India

Sen[1] has well highlighted the prevailing drawbacks of the present system of Indian higher education. The greed certificates that he has mentioned are evident even in the present times. Scientific workshops that are organized in academic/research institutes attract several participants who show up only for registration on the first day and would either disappear thereafter or 'snooze' through elaborate power-point presentations. The usual reaction at the end would be, 'I was just sitting there, I did not understand anything'. However, the same person who would comment as such, would deliver a delightful feedback in the valedictory session to please the audience. The main problem behind this is the fact that many experts lack the skill of attracting the interest of participants in such workshops. They continue presenting their knowledge through monotonous lectures which only 'kill' the interest of the participants. Hence, the few who participate with genuine interest are also disappointed. The same is evident in national/international seminars where participants would throng the registration desk on the first day but would eventually leave after their presentation is over, with participation/presentation certificates. This is well indicated by the gradually decreasing size of the audience during such occasions. Under such circumstances, these workshops and seminars remain mere clichés. This results into the wastage of funds that are pumped into organizing such events, except the certificates which are displayed during job interviews. These funds could be effectively used in upgrading research infrastructure in the country.

The inability of generating interest is also evident during usual classroom lectures in higher educational institutes and hence students end up sitting in their departments only for the sake of attendance. The result is the lack of curiosity mentioned by Sen[1]. However, we contradict his opinion that curiosity generation should be fostered from the school level. At this level, stress should be laid upon exposing students to preliminary science. Sen[1] seems to undermine the role of bookish knowledge during such stages. This is, however, a primary tool for acquainting students with different scientific areas, thereby laying the foundation of science. It is only after exposure to the theoretical knowledge from textbooks that children would be able to assimilate knowledge from research papers. Moreover, school teachers are not experienced researchers.

The fostering of scientific curiosity is the responsibility of university faculty who are actively involved in research. This cannot be expected of school teachers who are never actively involved in scientific research. In fact, rather than curiosity as mentioned by Sen[1], emphasis should be laid upon training students on the formulation of problems and finding out possible ways of solving them. Knowing a problem is not the aim of research, but solving is. Hence, along with generating interest, stress should be laid on developing analytical and reporting skills of students so that they could properly identify a problem, formulate it and then devise the means to solve it as well as report it. It would only be under such circumstances that research scholars would not be victims of mechanical research where everything is imposed upon and dictated by the supervisors, which according to Sen[1] is a problem.

We also contradict Sen's[1] views on making single-author publications mandatory for pursuing research. For

research work of this kind, funds and in many cases, adequate laboratory facilities would be required and students cannot be expected to manage this on their own. This would only lead to unnecessary pressure on aspiring Ph D candidates, loss of academic years and even unethical means.

1. Sen, S. K., *Curr. Sci.*, 2015, **108**(12), 2151–2155.

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Response:

I wrote about summer schools where discussion, solving simple problems and interactions with teachers are the pattern. Listening to invited lectures passively, which the commentators assume, is another matter. Members of the audience should have a measure of their abilities and interests before attending these lectures.

In case the commentators include the summer school lectures, let me point out, on the basis of the reactions stated, that it is the fault of the lecturers in assessing the receptive abilities of the audience. But overwhelmingly, it is the deficit of training in the students and junior teachers. Please allow me to narrate briefly an example from my personal experience. At IIT we ran for a few years an M Tech one-year diploma course in geochemistry, and admission was open to those with M Sc degree in geology from other universities, of course with good grades. In my course in physical geochemistry, I started with elementary thermodynamics. In my second lecture, when I wrote $dP/dT = \Delta H/T\Delta V$, the faces of more than half the students showed signs of uneasiness. Enquiry revealed that they had not learnt calculus at all. One of the students showed interest in doing a small 'thesis' with me. For him I chose Karnataka (near his home), where there was variation in rock chemistry within short spans and asked him to map it first. He told me that they were not taught geological mapping. So how can you expect him to follow guest lectures? He had not been taught elementary mapping, neither advanced analytical tools. Who is to blame – the student or his Alma Mater?

All parents know that normal children in 2/3 to 5/6 age range ask too many questions. Is this curiosity meant to be snuffed out in their schools? My suggestion was that up to class VII or so, they should be taught basic skills of arithmetic, grammar, writing, etc. but after that teachers should orient pedagogic style towards enhancing the students' thinking ability at a slow pace.

I did not suggest that school teachers should be researchers. But at the class XI/XII levels, the students should be made aware of the new developments in science – the source being computers and newspapers/magazines.

At college levels, especially during postgraduate teaching, students should be urged to go beyond textbooks.

For selecting Ph D research problems amenable to solution, scholars can suggest several problems, consult their guides and discuss the facilities available in the department or outside, and also the tractability of the problem before finalizing.

Every student need not go for a Ph D, and as I have pointed out, neither do we need so many doctorates, most of whom are not employable. So there must be a fair method of cut-off. This can be done by asking them to publish a single-author paper in a respected journal, or through elaborate tests on the progress of there research after 1–1.5 years. If you think that it will be cruel on the candidates and a nearly impossible task, sit on the shore and watch from a safe distance the streaming flow of international progress of science.

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