Educating the underprivileged geniuses

The article 'Genius in medicine'[1] caught my attention as it discusses how the present educational standards in medicine could be further improved in India. Since this goal does not apply to medicine alone, it seems to be important for education in general in many fields throughout the globe. The authors also proposed measures for improving the frequency of innovators in India. These measures need clarification.

The authors cite as the highest standard the definition of genius according to the Oxford English Dictionary as 'native intellectual power of exalted type: extraordinary capacity for imaginative creation, original thought, invention and discovery'. The authors continue stating that 'These components include as an example the capacity to learn and see what others miss; an inborn ability to innovate.' Then the authors cite many known historic examples of innovators.

The principal question of these authors is as to how to increase the frequency of innovative scientists in India. Cited are some very successful scientific institutions founded by scientists who returned from the US and established scientific institutes with an international reputation. These examples should be multiplied to enhance the number of innovative scholars remaining, so that they could work in India rather than abroad.

The authors propose to establish independent thinking throughout India from the first educational experiences already at a young age aiming at developing a mental stage where 'creativity supersedes rote learning' and scientific curiosity and independent thinking becomes established. They propose that this could be achieved by 'fettering the intellectual mind in a curriculum that sets free young minds so that they can show dissent with respect to "established truth" in science'. And a curriculum should be designed for educating the young 'for the development of critical skills in the Indian context'.

Several questions came up and demand clarification:

1. Innovative thinkers are very rare. How could you increase their numbers by a special curriculum of which you did not reveal any characteristics, except maybe that it prefers creativity rather than rote learning?
2. Who would be qualified to design, teach and perform quality checks for such a special curriculum and later educate the scholars?
3. What could be done to establish this novel curriculum, thereby aiming at finally teaching creativity and innovation, and that probably represents instructions for discovering facts that are unknown today?
4. Can creativity be taught? Can genius be induced by education?

Just after I wrote the comment above, an article appeared in the 19 May 2018 issue of the German Weekly *DER SPIEGEL* entitled 'Die unbekannten Genies' (the unknown geniuses). The goal of the association Mensa is to identify highly gifted adolescents in India's very poor areas which remain without an adequate education. With a series of intelligence tests, which are based only on defined pattern recognition, a kind of indigenous creativity can be recognized without the need for the ability to read or write.

Juveniles with an intelligence score above 130 are defined as highly gifted and Mensa is looking for resources to grant these 2% of the talented very poor (a frequency similar in the uncompromised population) a normal education as the common population.

This correspondence presents the first examples of detecting outstanding talent by the applied test by Mensa, which also corresponds to the creative capabilities in their daily life. Thus, this test can indeed identify the very invaluable but otherwise lost talents within the giant underprivileged population. This search has the capacity to assemble the highly gifted poor and by their assisted success, increase dramatically the pool of true inventors everywhere.

1. Pai, S. A. and Pandya, S. K., *Curr. Sci.*, 2018, **114**, 709–710.

REINHOLD P. LINKE

amYmed,
Vinzenz-Schuepfer-Str. 20a,
81475 Munich, Germany
e-mail: linke@amymed.de

Double-blind peer review system – an essential step for a fair evaluation of research

'I have a dream that my four little children will one day live in a nation where they will not be judged by the color of their skin, but by the content of their character.'

– Martin Luther King, Jr.

We evoke the above famous quote as we write this communication on the peer review system in research publications. Research is an essential aspect of scientific growth, and more importantly, it is for all to share their work and novel ideas through publication, irrespective of their associations and affiliations to ensure wide dissemination of scientific observations.

An impartial peer review process is crucial for the researcher, reader and journal. In this regard, adopting a double-blind review system by leading journals such as *Nature*[1], is certainly an encouraging development. Double-blind peer-review system is expected to be free from various biases, and thus, is a realistic and judicious step towards transparency, equity and justice in research and its publication. Apprehensions associated with the double-blind peer review system appear unsubstantiated and can be easily taken care of[2]. It is the authors' responsibility to ensure that the manuscript is anonymous and giveaways such as 'we

showed previously that …' should be replaced with 'previous studies have shown that …'. Just because a work comes from a well-known and reliable laboratory does not necessarily mean that it is standard too. Nonetheless, to overcome the issues raised[2], the option of preliminary check should remain with the editor and the editorial team who anyway have access to author details and affiliations to check for anonymity, reliability and suitability of the work before passing it on to the double-blind reviewers.

In the times of peer-review scams[3,4], the real concern is to be wary about the selection of right reviewers and ensure that publication standards are maintained. The central issue thus is to identify the right kind of reviewers who are competent enough to do justice to the assigned task. It is desirable that more and more journals adopt a double-blind peer review system for a fair evaluation of research, and to improve the quality of scientific publications.

Some reputed Indian scientific journals have already implemented double-blind peer review method in the process of publication. We encourage that all Indian scientific journals should adopt the same; this will go in a long way to improve the quality of scientific publications in the country. Major Indian scientific publishers should take a lead in this direction so that their journals follow this method of peer review process.

1. Nature news, *Nature*, 2015, **518**, 274; doi: 10.1038/518274b.
2. DeCoursey, T. E., *Nature*, 2015, **520**, 623; doi:10.1038/520623d.
3. Ferguson, C., Marcus, A. and Oransky, I., *Nature*, 2014, **515**(7528), 480–482; doi: 10.1038/515480a.
4. Cyranoski, D., *Nature*, 2017, **546**, 464; doi:10.1038/546464a

ACKNOWLEDGEMENTS. K.K. is supported by a DST PURSE GRANT and the UGC Centre for Advanced Study (CAS) awarded to the Department of Anthropology, Panjab University, Chandigarh, India.

TANUJ KANCHAN[1,*]
KEWAL KRISHAN[2,*]

[1]*Department of Forensic Medicine and Toxicology, All India Institute of Medical Sciences, Jodhpur 342 005, India*
[2]*Department of Anthropology, Panjab University, Chandigarh 160 014, India*
**e-mail: kewalkrishan@pu.ac.in; gargkk@yahoo.com*

Opportunities for forest landscape restoration in Uttarakhand, India using ROAM

Land degradation is a global problem caused by a variety of factors or processes which include soil erosion by water/wind, deterioration in physical, chemical and biological properties of soil and loss of its productive potential. Worldwide about 2 billion hectare of degraded lands has opportunities of restoration[1]. Estimates of degraded land in India vary from 30 to 175 million hectare (m ha) (ref. 2). Among the Indian States, Uttarakhand, a predominantly mountainous State, ranks 20th in terms of area under wasteland, which has 23.91% area under degraded land[3]. The Bonn Challenge is a global effort to bring 150 m ha of deforested and degraded land into restoration by 2020 and 350 m ha by 2030, contributing to the international commitments on climate change, biodiversity conservation and land degradation[4]. India was one of the first countries in Asia to commit to the Bonn Challenge, pledging to bring under restoration 13 m ha land by 2020 and another 8 m ha land by 2030 at COP21 of UNFCCC in Paris.

ROAM (Restoration Opportunities Assessment Methodology) provides a flexible and affordable framework for countries to rapidly identify and analyse areas that are primed for forest landscape restoration (FLR) and to identify specific priority areas at a national or sub-national level (Figure 1)[5]. ROAM has been used in countries such as Rwanda, Uganda, Mexico, etc.[6]. Realizing the urgent need for restoration in India, IUCN in partnership with G. B. Pant National Institute of Himalayan Environment and Sustainable Development, Kosi-Katarmal, is using ROAM in priority FLR areas through a sub-national assessment in Uttarakhand. While broad restoration opportunities and appropriate interventions are being identified at the State level, districts of Pithoragarh and Garhwal (Pauri) have been taken up for intensive studies. To make this participatory process representative, 11 consultations were held in 2017 among stakeholders such as Van Panchayats, Gram Sabha, NGOs, State line departments, etc. across block and district headquarters in Garhwal and Pithoragarh. Also, historical data of the past 1–2 decades on restoration activities carried out by various departments and other related agencies were collected.

During the consultation process the following drivers of land degradation (both natural and anthropogenic) were identified in order of priority: (i) increasing frequency of forest fire, (ii) invasion of alien plants (e.g. *Lantana*), (iii) livestock grazing, (iv) landslides and soil erosion, (v) pressure on forests for fodder/fuel wood, and (vi) increasing apathy of people towards agriculture and forest management. The ecological and socio-economic consequences of land degradation were reported as follows: (i) drying up of springs/streams, (ii) soil erosion and downstream flooding, (iii) human–wildlife conflict, (iv) declining natural resources and livelihood options, and (v) increasing out-migration. Thus a vicious cycle among land degradation, diminishing natural resource-based livelihood options and out-migration is discernible as a consequence of land degradation.

In order to offer R&D-based restoration opportunities, three physiographic zones were identified in the target districts. In the high-altitude region restoration of degraded land due to natural hazards (such as landslides) needs to be handled with priority through bio-engineering methods[7] using fast-growing and soil-binding species such as (*Alnus*, *Salix*, *Hippophae*, etc.). In the mid- and