

most East Asian populations and almost all Indians have haplogroup *M*. Haplogroup *M* is considered a basic East Asian Marker. This is however conspicuously absent in Europeans. (3) The coalescence age of haplogroup *M* is considered about 60,000 YBP and that of haplogroup *U* around 55,000 YBP. (4) Among Indian populations within each gene pool, tribal populations have greater haplogroup *M* than any other, North Indians have more haplogroup *U* than haplogroup *M*, South Indians have more haplogroup *M* than haplogroup *U*, and as one moves up the caste ladder – whether in North Indians or South Indians – more haplogroup *U* than *M* is present.

From these, researchers have broadly come to a consensus that there were most likely two migrations into India. Each probably a small group of females (or more females than males). One carrying haplogroup *M* around 60,000 YBP starting from Ethiopia, rounding the Arabian coast, landing into the Indian subcontinent, some of whom must have proceeded eastwards to populate SE Asia, Australia and beyond. Then around 55,000 YBP, a second group of females carrying the haplogroup *U* marker got out of Africa, and on reaching the Middle

East – split into two groups – one headed west to Europe and the other east towards India, merging with the forerunners, i.e. the haplogroup *M*. This explanation would reconcile all of the above listed facts. Though there are some data to indicate smaller admixtures around 32,000 YBP and a much smaller one centering over a time period ~ 9000 YBP, the researchers point out that none of these or any other data indicate any major splash in our gene pool occurring in the recent past.

Now, what should all this lead our eminent historians to declare *vis-à-vis* the conventional take on our ancient history? For starters, one would think that the Aryan invasion theory would be pronounced dead. And yet this theory has persisted, not only among seasoned researchers within the ASI, ICHR and other historical organizations entrusted with documenting our history, but also finds its way into respected mainstream magazines from time to time. Pick up any recent issue of an in-flight magazine and odds are, you will run into the old-familiar ‘when the Aryans overran Harappa around 1500 BC...’, etc. Why would such notions persist in spite of seemingly water-tight facts being now available? The reasons are not hard to

find. For one thing, the information is simply not widely known. For another, it is still complex enough not to be easily susceptible to sensationalism in the popular press. It is far easier to misinterpret some other data and breathtakingly declare ‘European gene found in upper caste Indians’. But more importantly, when non-mainstream historians pointing to the new facts draw ‘non-traditional’ conclusions, cries accusing them of being revisionist-history-fanatics or pro-Hindutva or some bogey is raised to pare them to size. And mainstream academics? Well, in their safe positions, they are by and large unwilling to rock the boat and say anything seemingly radical, if at all. On the contrary, much efforts are directed at belittling the new-fangled interpretations. The end result is that our history textbooks continue to carry outdated and disproven theories and our popular magazines blithely mouth inaccuracies oblivious of recent developments.

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## Science education: Some comments and observations

There has been a spate of letters in *Current Science* since 1999 expressing concerns over the plight of science education in the country and the remedies thereof. In this context, I wish to ventilate my perceptions on the issue.

First, I shall focus on the science curriculum. The framing of a curriculum may be treated as a two-box problem, as depicted in Figure 1. One box is the syllabus (curriculum) box and the other is the lecture-period (teaching-hour) box.

What happens if syllabus box is made first, and then the lecture-period box

(Path-I)? There is a high probability that this would produce a vast curriculum wherein the correlation between topics to be taught and lecture periods available is irrational. Consequently, it would fail to serve the purpose. This is because the size of lecture-period box (maximum number of lecture periods available for a subject in the course duration) is defined (closed box!), while the size of the syllabus box is undefined (open box!), permitting a tendency to add more and more topics. Now consider Path-II – start with the lecture-period box, choose topics of a subject with reasonable number of lecture periods assigned and proceed to build the syllabus box. This path would provide a mechanism of restraint on the size of curriculum, making it a rational one. It is not difficult to ascertain the relevance and importance of topics for a subject to be

incorporated in the curriculum, but it is quite difficult to make an effective and optimum size of the syllabus. The present problem of a huge and unmanageable curriculum probably lies in Path-I and its solution in Path-II.

The students’ approach to study the syllabus, the standard of teaching imparted and the evaluation procedure are all inter-related. The first two are often guided by the third. The quality of questions designed for evaluation is thus critically important. A ‘more concept than information’-based evaluation would guide the students in the path of logical thinking, analysis and inquiry. Further, the merit of the questions can also provide a direction of teaching with regard to the topics involved.

Teaching, to be effective, requires the continuing process of learning, and the

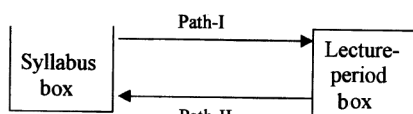


Figure 1. The two-box problem.

knowledge of a teacher must be updated. However, I fully agree with H. S. Virk (*Curr. Sci.*, 2001, **80**, 1477) that academic staff colleges started by the UGC for teachers' training have failed to serve the purpose and should be abolished. In fact, the requirement of attending orientation programmes and refresher courses for promotion under the Career Advancement Scheme has a negative impact, as the academic activity of the institution is

hampered by the absence of competent teachers attending these courses with no or little gain. Instead, the UGC should conduct national level examinations in the pattern of NET for in-service teachers to be eligible for promotion. Besides, the assessment of teachers by students should be introduced.

Last, but not the least, steps need be taken to formulate a policy for recognizing the contribution of teachers in sci-

ence education by conferring awards, being elected as teacher-fellows to the various academies, and other distinctions.

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## Ailing Indian science and academic leadership

The following views are in response to the correspondence by D. K. Basa (*Curr. Sci.*, 2001, **80**, 1364).

He is correct to infer that Indian science is not at all doing well. There are many reasons for the falling standard of science and technology: meagre allocation of funds, appointment of administrators/Vice-Chancellors (VCs), role of state governments and lastly the role of Chancellors. It is true that our contribution in the world of science is not adequate. The type of researches done in this country is not need-based and is mostly copied or duplicated, rather recirculated. We need to take a very strong view about the quality of researches. The above-mentioned letter also deals with the appointment of VCs and administrators of academic institutions. Appointment to these posts is often controversial.

In the history of our university, since 1946 we have had twenty-nine VCs with twenty-two in the last three decades. VCs are appointed either from the police or

administrative cadre. They may even be politicians (mostly defeated ones); very few of them are from the academic field. Such appointments of VCs (other than academicians) are not good, since the job of VCs has undergone a sea change. In olden days, the VCs used to have academic and financial freedom. Hence they had more time to devote to their campuses, to understand the problems of their students and faculty, to interact with the institutions of excellence at national and international levels, and to have more discussions with the University Grants Commission (UGC). Nowadays, the administrators/VCs are busy in the state capitals for more funds or to have good relations with the political bosses. It has been observed in many cases that the VCs plead before the political administration even for funds for salary, every month. If, in a specific state the government and the Governor are from different political parties, then the matter is still worse.

We should not think that the situation in campuses cannot improve. The state of the universities can be improved, if we are serious about the problem. Here are some suggestions, which can help in better management, academically and financially.

- (a) Education should be the subject of the centre.
- (b) The administrators/VCs should be only from the academic stream.
- (c) There should be no local political interference; only the Governors and the President of India should be in touch with the campuses.
- (d) The UGC should be given more academic powers.
- (e) No new university/institution should be opened, at least for the next five years.

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## Indian politeness is a dressing gown for dishonesty

It was interesting to read the editorial entitled 'The importance of being impolite' (*Curr. Sci.*, 2001, **80**, 1245–1246). The editorial started with a quote of J. B. S. Haldane;

'I have already come to one conclusion as to why science in India is developing with disappointing slowness. It is not

because Indians are stupid or lazy. It is because they are too polite.'

The exact date of this quote is not known. However, I strongly feel that Haldane's observation of being polite is not at all true and applicable to the science and engineering community in India today. It is well known that politeness is

a human virtue and it should never be sacrificed in any situation and at any cost whatsoever. The irony is that soon after independence, politeness became a dressing gown of dishonesty and is being used by people in all spheres of public life. This is the sole reason that even after more than fifty years of independence, the nation is lagging behind as far as