

Is 'rapid response' a future alternative to 'letter to the editor'?

Majority of journals are now available in the electronic form on the internet and many on-line scientific journals now have reader 'rapid response section(s)' in the form of comments, discussion forums or blogs. Comments can be posted by any person registered on the site. Lately there has been a growing feeling that a 'rapid response' can possibly be a future alternative to the 'letter to the editor'¹.

A letter to the editor is often presumed to be a type of manuscript wherein only comments following a post-publication review are published by the readers. In fact, not all letters to the editor are written in response to articles published in the recent past. They can be of different varieties, e.g. an independent commentary or viewpoint submitted not necessarily in response to a previously published article. Case reports and even research are, at times, published as letters. The let-

ters may also discuss matters of general, scientific, ethical or professional interest to the readers of a journal and the scientific community at large.

More importantly, a rapid response is not peer-reviewed. A letter to the editor of a scientific journal is a type of scientific and professional publication that is published only after peer-review scrutiny. A rapid response that is not peer-reviewed cannot be quoted as a publication like a letter to the editor. It will neither be considered by the scientific citation index nor will it have any weightage, as it is not peer-reviewed. In our opinion, a rapid response is in no way analogous to a letter to the editor published in a scientific journal. The two should not be equated, and in no way should a rapid response be considered as the future alternative to a letter to the editor.

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1. Jain, A. and Jain, R., *Rural Remote Health*, 2008, **8**, 936 (on-line). Available at <http://www.rhu.org.au>, accessed 18 November 2008.
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In defence of the 3 + 2 years system of post-school education

I was shocked to read about the recommendations of the Joint Science Education Panel of the three Science Academies to abandon the present 3 + 2 years system of post-school science education in favour of an American-style, single-tier system of four years¹. It was even more shocking that there was no mention of the Bologna Process of European educational reform, which aims at establishing a pan-European Higher Education Area by 2010, based on this 3 + 2 years system of undergraduate-postgraduate education²⁻⁴. Its importance to our own educational reforms programme will be illustrated by the following lines from the Australian Education International⁵ – 'The Bologna Process represents the commitment by 45 European countries to undertake a series of reforms in order to achieve greater consistency and portability across their higher education systems. The process will most likely have a profound effect on the development of higher education globally, as observers from other continents are taking a close interest in the reform process and beginning to consider how their own systems might respond to "Bologna" thinking. Australia needs to consider how best to respond to these

global developments if its own higher education system is to continue to be seen as being of high quality and relevant to international standards and requirements.' I shall briefly discuss below some aspects of the Bologna Process, which will be relevant to our own educational reforms programme. I shall also try to bring out the incompatibility of the proposed four-year programme with the ground realities of our undergraduate education system.

During my visits to universities in the UK, Germany, Italy, France and Spain, I have seen the revolutionary changes brought about by the Bologna Process over the past decade. Of course, not all of this change is without pain. The British professors complain about the extra teaching load for the two-year MSc programme, where they had at most one and sometimes none before. But they concede that the absence of a regular MSc course after their three-year BSc puts the British PhDs at a disadvantage relative to the Germans in academic appointments.

The German professors complain, with good justification, that the two-tier system of 3 + 2 years is inferior to their old integrated five-year course in training for

an academic career. But they admit that the three-year BSc course feeds to an increasingly diverse job market besides the specialized MSc course, which the integrated five-year course could not. Moreover, it offers more flexibility to students for moving to universities of their choice for the specialized MSc course. (Nonetheless, I feel there may be room for at least a few integrated five-year programmes for academically motivated students.) Let me summarize below the main features of the Bologna Process of educational reforms²⁻⁴.

The Bologna Process of educational reforms and convergence is based on an intergovernmental agreement between both EU and non-EU countries. This is not a treaty, and there are no legal obligations for the signatory states. The participation and cooperation is completely voluntary. This 'bottom-up' approach of voluntary convergence maintains the sovereignty of the states and their educational institutions, while ensuring cooperation mainly through peer pressure of the academic community. The universities and other institutions of higher education are treated as actors, rather than objects of this reform process.

The starting point of the Bologna Process was the Magna Charta Universitatum issued at the meeting of university rectors, celebrating the 900th anniversary of the University of Bologna – and thus of European universities – in 1988. But the actual Bologna Declaration was signed in 1999 by 29 European countries at Bologna, with the aim to create a European Area of Higher Education (EAHE) by 2010, in order to enhance the employability and mobility of citizens and to increase the international competitiveness of European higher education. The first two of the six declared objectives are:

1. Adoption of a common framework of readable and comparable degrees.
2. Introduction of a two-tier system of undergraduate and postgraduate degrees in all countries, with the first degree no shorter than three years and relevant to the labour market.

This was followed up by ministerial conferences in Prague (2001), Berlin (2003), Bergen (2005) and London (2007), in which 16 other European countries also joined. Thus all the European countries from the UK to Russia and from Scandinavian countries to Turkey are part of this EAHE now, totalling 46 countries after the independence of Montenegro, and with a total population over thrice that of USA. The Bergen declaration defines the three post-school cycles awarding (1) Bachelor's, (2) Master's and (3) Doctoral degrees. In most cases these will take 3, 2 and 3–4 years respectively. There have been many Bologna workshops throughout Europe to give detailed structure to the Bachelor's and Master's programmes in a coordinated manner. A survey of the adoption of the Bologna Process in various countries shows indeed that almost all of them have adopted the 3 + 2 years system for the two-tier B Sc–M Sc programme. It has been envisaged that this

two-tier programme will also enhance exchange with American and Japanese students, who can come to Europe for the Master's degree; this was not possible in a single-tier system. Likewise, European students can go to US graduate schools after their B Sc or M Sc, depending on their calibre, as has been the case with Indian students for long.

In view of the above developments it will be false to claim that the proposed four-year BS will have better international compatibility than the present 3 + 2 years system. Indeed it will be ironical if our educational reforms process recommends abandoning the 3 + 2 years system at this time, when a similar process in Europe has converged on this very system as optimal in terms of employment, mobility, specialization and international exchange.

Note that the present two-tier programme of 3 + 2 years is perfectly compatible with the integrated five-year programme of the IITs, which students can join after a B Sc, or the dual M Sc–Ph D programme of our national institutes, which they can join either after their B Sc or M Sc. In contrast, the proposed four-year BS programme will be compatible with neither of these two quality academic programmes of our country, but only with the American system. This will evidently mean massive brain-drain of our young scholars to feed American universities at the cost of our own, notwithstanding the claim to the contrary¹.

Finally, let us look at the ground reality of our B Sc education programme. This is largely carried out at colleges with understaffed classes and under-equipped laboratories, while M Sc is taught at a few (relatively) better equipped colleges and universities. In the four-year BS programme these under-staffed and under-equipped colleges will be loaded with the fourth year of advanced (M Sc level) science course, which they cannot do justice to. This will inevitably lead to further

degradation of our science education standard. Thus, by all accounts, the proposed American-style four-year BS programme will be detrimental to science education in India. It goes without saying that we need massive investment in our college and university system to improve the undergraduate science education programme. But it is no good to spend it on initiating a programme which will only feed American universities with our young scholars at the cost of our own scientific institutions. A much better way will be to invest massively in our undergraduate colleges for qualitative improvement in the present three-year B Sc teaching.

There should also be massive investment in our universities, with the specific provision of adding undergraduate (B Sc) teaching, which is missing from most of our university departments. This will give an opportunity to the academically motivated students to pursue undergraduate science course in a postgraduate/research milieu, like their counterparts in American/European universities.

1. Joint Science Education Panel, *Curr. Sci.*, 2008, **95**, 1411–1420.
2. Bologna Process: Wikipedia, the free encyclopedia portal.
3. Bologna for Pedestrians: The Council of Europe Internet Portal.
4. The Bologna Declaration – an explanation: Confederation of EU Rector's Conferences and Association of European Universities (Internet Portal).
5. The Bologna Process: Australian Education International (Australian Government Portal).

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The proposed 4-year B S programme

As I looked at the model syllabus for the proposed 4-year B S programme¹, I thought it was good. However, on mulling over it and trying to visualize students in the programme, I realized a potential problem. As mentioned in the position paper, students often take up the study of biology because they dislike mathemat-

ics and vice versa. Merely putting all the subjects in will not necessarily change their likes and dislikes.

One might argue that students who take up biology may well have got decent marks in mathematics and physics, for instance, in the 12th class, and therefore, if they are taught the subject in greater

depth or by more qualified teachers, they may find it interesting. True. However, the high marks do not necessarily mean they have a feel for the subject, or actually understand what they have learnt. Feynman has talked of the 'fragility' of people's knowledge, and he was referring to undergraduates at the Massachusetts