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Better than money: New peer review metrics for the next RAE

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The recent debates about replacing the RAE with a system of 'metrics' seems to have got bogged down into a debate about money, with whether research income is or is not a good proxy for research achievement. In this article we suggest a way to retain the principle of the peer review system, adapted for the era of metrics, using internet technology. This does not appear to discriminate against non-big science disciplines or institutions which are disproportionately full of non-big science disciplines. This system is one which recognises and utilises the web as a key contemporary medium through which communication about academic work takes place.

The arguments against research monies as the basis of HEFCE QR research funding have been well aired. For us the most important point is that research income is not well-related to research achievement for at least half of academic staff in British universities. Only in big science are inputs and outputs predictably and reliably connected. Outside big science there would seem to be no consistent relationship and indeed sometimes it seems that funding and internationally recognised agenda setting research achievements can be inversely related. It is thus important that research output, not its inputs, should be the sole academic performance to be measured and assessed in the RAE. Making research income the only criterion for assessing research both misrepresents the way that current academic work is undertaken and will distort academic priorities as the pursuit of money will tend to overwhelm other criteria and activities. It provides an inappropriate tool for university management to discriminate between levels of research performance. It will demoralise academic staff working in the arts, humanities, social sciences, management and 'small' sciences like mathematics and will lead to an obsession to get funding at all cost. And yet since the research councils outside 'big' science are not provided with the funds to deliver these monies on a regular basis to such staff an increased rate of application will reduce the 'success' rate for funding and further demoralise staff.

So is there a way of developing a simple system of metrics that focus on peer review of outputs? Our suggestion is that Google Scholar (http://scholar.google.com/) provides the *basis* of such system. It is better than other science/social science citation systems in that this counts citations *to* books, chapters, reports and grey publications as well as to journal articles and does not presume to second guess which the leading journals are. It is especially useful in recognising the significance of books within academic life. As far as we understand its web crawlers look everywhere on the web for citations (or at least will do within a short period of time) and it treats all such citations as equivalent. By say the end of this decade pretty well all journals, many grey (e.g. policy oriented) publications and some books will be on the web and all such citations can be counted.

How would such an RAE be developed? We suggest that an RAE is undertaken at the end of each decade. All universities would have to do is to list their staff or a selection of staff that are in post at the end of the decade, say at the end of 2009 (and 2019). Google would then provide for each grouping of staff a count of how many citations there are on the 'web' to those publications that appeared 2000-2009 from those listed staff. Higher Education Institutions (HEIs) would not have to list the publications; indeed there would be almost no costs incurred within each HEI. There are no doubt issues to do with the coverage of Google scholar (with a need to exclude self-citations) but we think Google would be willing to upgrade their system (for free?) in the light of the exceptional use that would be made of it. So if then in department or area x there are on the web say 2000 citations to the publications that have appeared 2000-9, then this would then be calculated as a citation rate per member of staff, a kind of grade point average (GPA). QR income would then be calculated as some multiple of the number of staff listed and the GPA, normalised for that type of discipline.

Such a system would provide not only a distribution of money but also of academic status through the GPA. It would retain the basic principle of peer review. It would also capitalise upon the 'democratic' nature of the web in which all citations to people's work are treated as equivalent. Also with the extensive grey publications on the web applied research would also be treated similarly to more theoretical work, so reassuring those HEIs with more of an applied focus.

At the basis of our proposed system are certain notions: that academic work is meant to enter the public domain, that the public domain centrally includes the internet, that the internet is increasingly comprehensive in its inclusion of academic journals and publications, and that work referred to and used a lot is more significant than that which is rarely cited. With a system that can count citations to books and other non-journal forms of publications the previous objection to citation by those not working in big science is no longer justified. Of course all systems are imperfect but it is better to deploy a system to allocate billions of QR money and significant academic status on the basis not of presumed academic prestige (as happened pre-RAE) or money but through the responses of peers to what it is that one has produced. The system we advocate here thus maintains something of a peer review system that has been a key feature of the RAE since its inception in the UK in 1986. This system thus goes with the idea that it should be one's 'colleagues' (and students) rather than presumed prestige or money that ought to provide the basis of research funding and status.

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