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Campaign for Science and Engineering in the UK

CaSE 06/17

Putting the cart before the horse: the purpose of Funding Council block grants must lead the mechanism for distribution

Response to the Department for Education & Skills consultation on the reform of Higher Education research funding.

1. The Campaign for Science & Engineering is pleased to submit this response to the DfES's review of higher education research funding. CaSE is a voluntary organisation campaigning for the health of science and technology throughout UK society, and is supported by over 1,500 individual members, and some 70 institutional members, including universities, learned societies, venture capitalists, financiers, industrial companies and publishers. The views of the membership are represented by an elected Executive Committee.

Q1. Which, if any, of the RAE 2008 panels might adopt a greater or wholly metrics-based approach?

2. In principle, CaSE supports the thrust of the *Next Steps* document in believing that the use of metrics could offer an improvement on the current RAE. The RAE is a bureaucratic process that tends to support safe research that fits within the existing framework of knowledge. Metrics could offer a lighter touch, but only if the whole system is much clearer about the purpose of the Quality-Related (QR) funding that is to be distributed. Until this question is clearly answered, consultations like the current one can only hope to alienate the research community and certainly cannot expect to produce a defensible result that will command broad support.

Q2 Have we identified all the important metrics?

3. It is impossible to know, because there is no clear indication of what is expected of the QR money being distributed and consequently no attempt has been made to say how the metrics would promote desirable outcomes.

4. In the past, a university's Funding Council block grant for research (the money that is now distributed as QR) was available for a variety of purposes under the heading of providing a 'well-found laboratory'. These included such things as the costs of some research training, the provision of basic infrastructure (including, importantly, human infrastructure such as technical staff), and some provision for investing in genuinely blue-skies research of the kind that Research Council committees are unlikely to support.

5. In recent years, this ideal has died because there has been no choice but to use QR money to plug the gap created by the failure of the Research Councils to pay anything like the full costs of the projects they support. This problem has been

exacerbated because the QR money has not increased in line with the rapid growth in Research Council funding; the two have become out of balance.

6. Now that the Research Councils are moving towards paying the full economic costs of the projects they support, there is (at least in principle) the possibility of QR money again become available for use "at the institutions' discretion" [the words used in the 1993 White Paper Realising Our Potential].

7. Assuming this is what is intended, and if the intention is that universities will again have money available to invest in really novel research, with perhaps a higher risk of failure but a higher potential reward than that funded by the Research Councils, then this needs to be at the heart of the system of distributing the money. It is not clear from the consultation document whether this is what is intended since the list of objectives in paragraph 3.5 is lengthy and broad.

8. Whether a metrics-based system is the best way of funding this kind of novel and innovative research is open to discussion, but on the assumption that such a system will be used for the medium term, then serious thought needs to be given to the metrics that will be used.

9. Many of the metrics identified (all of those in paragraph 4.2) are INPUT measures, and say nothing in themselves about whether the OUTPUTS of an institution are of the nature, quality and quantity that would justify further public investment of the kind that QR provides.

10. Many of the proposed metrics that purport to measure outputs are obviously too crude to provide any useful information. For example, the raw number of spin-out companies created by a university tells you nothing more than how effective people have been at the bureaucracy associated with the formal creation of a company as a legal entity. Anyone can spin out any number of companies. What matters is whether those companies grow and provide valuable economic activity.

11. The cart has been put before the horse. There needs to be a clear enunciation of what sort of research the limited funds available through QR are intended to promote and then a more serious and thoughtful attempt to work out a way of distributing the cash.

Q3 Which of the alternative models described do you consider most important for STEM subjects?

12. None of the current models will work well.

13. Model A states that funding will be distributed "as a function" of external research income, but no function is specified, so it is impossible to be entirely sure what is intended. But in any case, using input measures alone will drive undesirable behaviour and will not reward innovative outcomes. It also patently punishes individuals, groups, institutions or entire disciplines where research is not expensive (this will obviously apply to many non-STEM subjects, but also to much of mathematics and many other sub fields of the natural sciences).

14. As the consultation document states, Model B relies on assumptions about cost ratios, and the Funding Councils' track record in this field is lamentable.

15. Model C would punish whole subjects that performed well internationally.

16. Model D builds in a reliance on out of date RAE scores, and part of the point of this exercise is to do away the inadequacies of the RAE.

17. Model E punishes medical research, and we doubt whether that would be supported by the taxpayers whose money is being distributed.

Q4 What, in your view, would be an appropriate and workable basis for assessing and funding research in non-STEM subjects?

18. CaSE works only in STEM subjects and cannot offer an opinion on this issue.

Q5 What are the possible undesirable behavioural consequences of the different models and how might the effects be mitigated?

19. Models that rely on input measures, which most of the proposed models do, would encourage people to be ever more aggressive in their pursuit of money instead of their pursuit of knowledge.

Q6 In principle, do you believe that a metrics-based approach for assessment or funding can be used across all institutions?

20. Whatever system is used, it should aim to be comparable, and if output measures were used, this should be possible.

21. However, it is ludicrous to pretend that all the universities in the UK are the same kind of institution, and that what works for one will always be suitable for another. Once again, we need to be clear about what is expected of the wide range of different institutions that now make up the university sector. Until we are, it will not be obvious whether a single system can be designed to reward them all adequately.

Q7 Should the funding bodies receive and consider institutions' research plans as part of the assessment process?

22. Probably not. Part of the point of the dual support system is that QR funding rewards a track record while the Research Councils provide funds prospectively on the basis of future plans. This distinction is one of the few things that is both entirely clear and defensible about the current funding system for university research, and should be maintained.

Q8 How important do you fell it is for there to continue to be an independent assessment of the UK higher education research quality for benchmarking purposes? Are there other ways this could be accomplished?

It is valuable to know how the UK is performing relative to the rest of the world, but the RAE does not really achieve this. The panel members all work in UK institutions and the international reviewers can only be asked a basic, leading question about whether they support the broad outline of the results.

In making overarching global comparisons, we have to accept that the results will inevitably present a crude broad-brush snapshot. The work of successive Chief Scientific Advisers in using citation analysis and similar techniques has been very useful in presenting such a picture. In addition, the international reviews of disciplines (such as the recent one on Physics and Astronomy) can provide a slightly deeper look at particular areas. Taken together, these existing approaches provide a much better assessment of UK research quality against international standards than the RAE ever has, and have the benefit of actually being independent of the researchers whose quality is being measured.

October 2006