

EVALUATION OF *KNOWLEDGE AND INNOVATION* REFORMS

Submission to Department of Education, Science and Training (DEST) of the Australian Government

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Context. I have consulted none of my colleagues in writing this submission, so it represents my view alone. I write as a concerned research academic, hoping that a personal case will be a useful input to DEST's consultation exercise. I have read DEST's August 2003 Issues Paper, and attended their 27 August Workshop at ANU. My job, which I have held since arriving leaving the University of York in the UK in July 1999, is a continuing post as Fellow (Grade C / Senior Lecturer equivalent) in CRES, which is part of the ANU's Institute of Advanced Studies. It is a research-only position, so the areas affected by the *Knowledge and Innovation* (KAI) reforms are central to my working life.

Summary. My overall opinion is that:

- (a) It is desirable for the research and research training performance of faculties, departments and individual academics to be measured and rewarded in some way.
- (b) However, the current KAI system of performance measurement and reward is so misplaced and simplistic that over the long term it will gravely distort and damage Australian academic research. The main fault in the current system is that it treats *inputs* (mainly money) as a vastly more important measure of research performance than *outputs* (mainly publications), apparently in the mistaken belief that past correlations between inputs and outputs will continue, despite the powerful incentives that the KAI system itself will exert to change such correlations. The overall effect will be to encourage maximum data collection at maximum cost using the maximum number of PhD students, and the minimum amount of data processing and thinking about what it all means.
- (c) A better, more sophisticated system would almost certainly need a large element of expert academic judgment about the *quality* as well as quantity of research output, probably as some kind of stripped-down form of the Research Assessment Exercises (RAE's) used in the UK. This in turn almost certainly needs more expenditure at DEST, to pay for more staff with enough experience to ensure that any new system is not deliberately distorted by the expert academics who run it (i.e. to minimise the kind of "rorting" seen in the UK), and does not discriminate against interdisciplinary research. So be it! Without such increased expertise at DEST, I feel sure there will be a colossal distortion, not just in how grant money channelled through the research councils gets spent, but also in how a lot of the block funding gets spent too. The incentives are pervasive, and academics will respond to them in most of their choices.
- (d) Rewards to university departments for PhD completions should be phased out gradually, rather than cut off suddenly, if completion is late. The sudden cut-off is bound to create excessive pressures on academics to lower standards for passing, and on students to overwork at the end.

Further reasons for my opinions are as follows, under separate headings for Research and Research Training.

Research

The mission statement of CRES states: "From its inception the objective of CRES has been to undertake *interdisciplinary* research into a range of environmental and resource issues. Such studies focus primarily on Australia and are particularly concerned with *policy options and implications*. Normally such work *does not involve the collection of new primary data*." [italics added]

I believe this is a good mission, and it is the main reason why I left the UK to join CRES. First, I want my research to be useful in guiding environmental policy options. Second, for this to happen, it is essential that my research (which is mostly theoretical and conceptual) takes seriously the input of disciplines outside my own, since policy debates are inherently interdisciplinary. Third, it happens that the research I'm best at (i.e. what built my reputation) does not require the collection of new primary data. And clearly, someone has to do the thinking about what primary data mean, otherwise why gather them in the first place? All I use in my research is normal office facilities (computer, telecommunications, support staff, library, etc), some travel money for conferences etc, and *my time*. Because of CRES's mission statement, something similar is true for many of my colleagues, and I'm sure it's also true for many academics everywhere.

Yet the current KAI system, as I have experienced it coming down through ANU management in the last two years, pushes me strongly away from doing good research. Only 2% of the \$1,854m listed in Table 2 of the DEST Issues Paper is based on any measure of research output, i.e. publications-driven (albeit by a very crude and distorting measure). So not surprisingly, I'm coming under more and more pressure to raise grants money for expensive laboratory equipment, or large surveys, or costly field experiments, *which I do not need*. Yet most grants will pay nothing for my time, the vital ingredient. Spending the considerable time needed to win big grants, and then managing all that spending, is just a huge distraction from what I happen to be good at.

In CRES there have always been a few colleagues who do collect new primary data, and therefore need (and very successfully win) large research grants. So you might well look back at CRES research grant income and research publications over our 30 years of existence and find a high overall correlation between them (I don't know if anyone has done this). But so what? Whatever correlation has existed, is now under enormous pressure from KAI to change. People who produce a lot of useful knowledge, but cost very little will be recruited and promoted much less relative to those whose knowledge is very expensive to produce.

So I am vehemently opposed to removing the research publications element from the KAI element. It would leave the incentives solely focused on inputs, and would eventually lead to the kind of nonsensical "chandelier" syndrome which was a notorious result of Soviet central planning. (The output of chandeliers was measured and rewarded by weight and not by value, so factories responded by making chandeliers so heavy that ceilings had to be specially reinforced to hold them up.)

Yet just giving much more weight to the current, simplistic publications element in KAI will not work either. It will indeed lead to too many short, low-impact publications, as noted in para 3.2 of the Issues Paper. In my academic output, I put much energy into getting high quality, international journal articles which are generally highly cited, because I'm convinced that's how really valuable knowledge is created. But I could no doubt publish far more rapidly by going downmarket, and that's what the KAI system of counting publications irrespective of quality or length encourages me to do. Hence the need for RAE-style expert panels to judge which publications have real impact (to some extent using citations data, but not just that). The problem then is that panels are purely discipline-based, and reinforce the already strong academic biases against interdisciplinary research. (This had a big negative effect on the environmental university department I was at in the UK.) No solutions to this problem are easy, but with sufficient care I believe they can be found.

The other important part of CRES's work which gets no incentive from the current KAI system is *outreach*. By implication, our focus on "policy options and implications" requires us to communicate our findings to the policy community, who do not read academic outlets. As I understand it, government policy is firmly in favour of such outreach. But the KAI system points exactly in the opposite direction. Why should I spend time on press articles and media interviews when I could be writing a grant application or squeezing out another low-grade publication? Again, expert panels could take outreach into account, but I cannot imagine any automatic (non-expert) scheme of measuring outreach performance numerically that would be workable: the diversity of outlets is just too great.

Research Training

All my comments here are about PhD students (I currently have four main supervisees, and co-supervise three others). I applaud the fact that the KAI incentives now make PhD students highly valued. Many of my colleagues agree that we wish our own supervisors had been anything like as diligent as we are now in supervising our students.

Nevertheless, I believe the current KAI pressures have gone way too far, principally because there seems no recognition that both students and research topics need to be of a minimum quality (that word again) for a PhD to be worthwhile, in the interests of both the student and the nation. Despite reassurances from ANU management that the quality of a PhD will not be degraded, I frankly don't believe this is possible. The KAI financial rewards for taking on more and more PhD students, and simply not allowing them to fail, are just too enormous. I am already under great pressure to take on more PhD students, which in my case will inevitably reduce, not enhance, the amount of research I can do. And few questions are being asked about the quality of the students applying.

The degradation of academic standards is going to be particularly acute when current students come to the end of their 4-year term and departments face the sudden loss of scores of thousands of dollars if students do not finish in time (or so I believe, though one measure of the complexity of the current KAI system is that no one gives us clear advice on this). Why not at least have a continual phase-out of a department's KAI rewards for PhD completion, e.g. 5% of the rewards are lost for each month that completion is late? Furthermore, why not add in some reward for quality by judging the publications arising from past students' research as well as staff research? (The inevitable time lag here will do no harm; time lags of at least 5 years in the UK RAE system have not stopped that

system having profound effects on research excellence.)

[end]