

## **'The Crisis in Research Education'**

**an address by**

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The crisis I am talking about is not one of funding, or of supervision, or of length of examination time, or indeed anything to do with what happens inside universities. What I am pointing to is a crisis of the employability of graduates. In brutal summary, we have too many newly minted PhDs and research Masters graduates who can't get appropriate jobs.

A few statistics are necessary. First, in 1991 there were in round figures 33,000 academic staff in the system. Last year there were 32,000, and that was a reduction from 1997 of around 2 per cent. The trend in academic appointments is downwards, or at best flat.

Second, in 1991 there were 15,000 students enrolled for higher degrees by research, and 14,000 enrolled for higher degrees by coursework. Last year those numbers were 27,000 and 28,000 respectively. In short, the number of students undertaking higher degrees by research is approaching the number of academic staff in the university system. Some of those undertaking coursework degrees are also seeking employment as academic staff.

Third, about half of all academic staff hold PhDs and a quarter Masters degrees. We can assume that most of the remainder are enrolled for higher degrees.

Fourth, only about one third of our academic staff are over 50 years of age. If we assume that retirement is evenly spread, then about 11,000 staff will retire over the next fifteen years, at around 750 each year. But in 1997 we graduated around 5,000 PhDs and research Masters, of whom about 1,000 were overseas students. The crude model I have set up has some 4,000 graduates seeking 750 jobs.

Fifth, the consequence is academic unemployment. The most recent GCCA destination data suggest that about 11 per cent of recent PhDs fail to find work. These rates are much more than twice as high as those for Bachelors degree graduates. The unemployed proportions are much higher, greater than 20 per cent in some cases, in the Humanities, Social Sciences, Languages, Chemistry and Physics.

How did we get into this pickle, and how do we get out of it? As always, we need some history. The first Australian PhDs graduated in 1948, and until then the highest degree commonly awarded was at Masters level. The DLitt, the DSc and the LLD were very special.

In the last half-century Australian universities, like those in the United Kingdom, have moved to make the possession of an appropriate higher degree a requirement for progression (often for appointment). All this was done with the approval and support of the Commonwealth Government and its agencies. In the last twenty years the Commonwealth has not encouraged us in quite the same way, and in many respects, familiar to you all, has discouraged us.

But in the area of postgraduate research training we have gone on doing what we want to do, and the numbers go on growing. There are three powerful causes.

One is structural: the formation of the Unified National System of higher education in 1988 allowed the new universities to get into doctoral training, which some of them did, in my view, much too enthusiastically. The older universities tried to distinguish themselves by emphasising even more strongly their own role in higher degree research training, often at the expense of their undergraduate programs.

The second is the human factor: most academic staff greatly value research students, who improve the research output of departments as well as their liveliness, and give staff a sense that their department is part of the big picture. All of us want some sense of continuity — that what we do is important and will be carried on by the next generation.

The third is the peculiar attraction of research itself. The great truth about all research is that its findings always point to more research. In the last fifty years there has been something like a fifty-fold increase in what we academics like to think of as human knowledge (which is what we ourselves produce). In the laboratory-based sciences in particular, research is now inextricably connected with the training of postgraduate students, but it is by and large true everywhere that research students are the foot-soldiers of the research process, with the academics staff as the officers. The research-granting process now seems to assume that all projects should involve PhD students unless the project is small (in which case it ought not to attract a Large Grant anyway). I no longer think that this is a sensible proviso.

By and large I am persuaded that this activity has been a virtuous one for our country and for humanity, but it has had its costs, and it does assume the constant supply of a lot of money — indeed, an increasing supply of money. It needs to be remembered that places for higher degrees by research are mostly HECS-free, that research needs a great deal of expensive infrastructure, that research students need a lot of one-on-one attention, and that library needs are very often crucial.

Some of the needed money has come from inside. It is hard to be precise, but I am uncomfortably aware that over the last decade undergraduate education has been stripped to provide more money for higher degree education and for research generally. The amount may be very large, perhaps as much as or more than half a billion dollars.

Above all, higher degrees by research represent a huge investment in human capital on the part of the students themselves. GCCA data suggest that 6 years is the mean time for completion for PhDs, and about a third drop out along the way. Investment of this order assumes appropriate post-graduation careers. I think that it is plain that universities are not going to provide them, and the outlook in the rest of the Australian R&D system, the other principal employer of researchers, is not rosy. Indeed, most PhDs would invest much more wisely in the MBA.

Nor is this a new problem: an earlier slowdown in employment from about 1980 meant that a whole generation of young researchers failed to find jobs. Many left academia altogether, and there was a great sense of bitterness and betrayal.

It is well to remember that the PhD is not a qualification highly valued outside universities and research settings, for obvious reasons. Too many PhDs are over-specialised and lack a wide knowledge of their fields. The West Committee reported some employer dissatisfaction with research graduates. It is not even obvious to me, as someone who has been managing universities at one level or another for nearly thirty years, that PhDs make better academics, all things considered.

So, as Lenin once famously asked, What Is To Be Done? I start with a guess that universities are not going to grow much for a few years at least, and I note that academic staff no longer have to retire at 65, though most do. There is a great tendency to fill jobs at Level A, a level for which PhDs are formally over-qualified and at which they are poorly paid. In short, things are flat, and likely to remain so.

Let me offer a principle. Universities should be developing a felt obligation to care for the future employability of their graduates, especially those who have acquired a great deal of formal education. Some attention must be paid to whether or not there are likely to be any jobs out there. No-one should be steered into a PhD program, no matter how many medals he or she has won, if the job prospects look bleak.

We have a problem, and I have five suggestions for approaches to it. None of them will be very popular. The first one is that we need to tackle the problem bravely and now, and not hope that it will go away. At the national level the task is one for the AVCC, at the local level for the vice-chancellor and the appropriate committees of each university. It ought not to be a competition between disciplines and departments in which standards at Honours level may be sacrificed in order to supply an adequate supply of APRAs. If we go on

producing PhDs for whom there are no jobs we will pay in other ways. This is not an area in which market forces will produce a satisfactory outcome, in my view.

Second, we should look hard at whether or not the contemporary PhD is really the appropriate degree for all academic staff. In the late 1960s I tried to get more coursework introduced into the ANU PhD in order to give graduates a better start in academic life. I failed then and failed once again in the mid 1980s. I think that there is a strong case to be made for both the traditional coursework Masters degrees, like the LLM, and the newer professional doctorates, like the EdD.

Third, because of the importance of high-quality education as well as research, there is a case for each university to appoint some promising young staff at Level A and then ensure that their teaching (through a Graduate Certificate in Higher Education or similar) and their competence in their field (through the appropriate higher degree) are both developed. Universities need to avoid the great Australian sin of academic incest — that is, of hiring their own graduates and ensuring that they never study anywhere else. We have enough of that already.

Fourth, the allocation of APRAs by the Australian Research Council should be determined at least in part by the employment prospects in different fields. Universities may need to be able to show that their research degree graduates are successful in gaining appropriate employment. By that I do not mean getting a one- or two-year postdoctoral fellowship overseas; there have to be jobs for these people when they come back.

Finally, we should point out how important all this research activity is, not to the Commonwealth, which is bored witless by the way we say it, but to the community at large, to industry and to those who profit by our research. That will mean saying some good things about applied research which is mostly what people will pay for, and down-playing the importance of pure research, which is what we like to do.

What worries me is that we will do none of these things, and that an exasperated Minister will lose patience with our failure to understand our own situation, and make some decisions for us. We surely will not like them.