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Postgraduate Funding - supplying the future generation of researchers and technicians

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Supplying the future generation of researchers and technicians

Postgraduate funding

Mick Fuller (Chair of UK Council for Graduate Education)

Of the 2.5 million students studying at universities in the UK some 30% [500 000 postgraduate taught (PGT) + 100 000 postgraduate research (PGR) students] are studying for a postgraduate degree¹, and the decade from 2001 to 2011 saw a 7% year-on-year increase in the number of students registering for postgraduate degrees.

Within this expansion has been a healthy rise in UK students, but an even bigger rise in non-UK (overseas) students which bring large revenues to universities on top of the normal home funding. In fact, this decadal expansion in postgraduate student numbers was an unregulated or uncapped market for UK universities with a commitment from the Government funding agency [HEFCE (Higher Education Funding Council for England)] to fund home/EU student numbers as they rose. Under a secure funding model, many departments across the UK followed an expansion route for postgraduate degrees, and this has encouraged specialization, collaboration with industry and the public sector, and has fuelled research ambitions and increased job satisfaction for academic staff who want to engage with more specialization at the forefront of their subject in small class sizes or on a one-to-one basis. The expansion in postgraduate courses and student numbers has been based largely on academic arguments since funding was always secure. However, recent Government policy changes on the funding of UK universities have begun to threaten the security of the postgraduate sector. Most of these changes have been to do with undergraduate funding, but there is a knock-on effect on postgraduate funding. In particular, the switch from a grant-based (to the universities) to a loan-based (via the student) financing model means

that students are graduating from their first degrees owing £20 000–50 000 and it assumed that they will not invest so readily in the future in a postgraduate degree. In parallel, the funding agency (HEFCE) has had to reduce the amount of direct funding to universities for PGT courses as its budget has been squeezed in the financial crisis.

A quick explanation of the funding mechanism helps to highlight the challenges facing UK universities.

Home/EU PGT students are funded in part by the 'fee' the student or their sponsor pays and part by HEFCE according to a weighted formula depending on the subject, with higher amounts for STEM (Science, Technology, Engineering, Maths and Medicine) subjects. These students are not entitled to loans from the Student Loans Company and so, unless they have a sponsor, they have to find their fees themselves and support themselves while they study. International overseas students do not receive any HEFCE support and so must pay the full cost of their course, their living costs, their costs of travel to the UK and their visa costs (now a substantial cost in its own right). However, many of these international students are sponsored by their governments on full or partial scholarships as part of their home research and academic capacity building programmes.

For home/EU PGR students, there are a lot more full or partial scholarships available to students which

Key words: graduate debt, loan-based financing, PhD, postgraduate, Research Council studentship.

Abbreviations: DTC, doctoral training centre; HEFCE, Higher Education Funding Council for England; HEI, higher education institution; ITN, Initial Training Networks; PGR, postgraduate research; PGT, postgraduate taught; QR, quality-related; RDP, research degree programme; STEM, Science; Technology, Engineering, Maths and Medicine

Table 1. Matrix of actions, consequences and likelihood for sustaining PGT provision in the UK

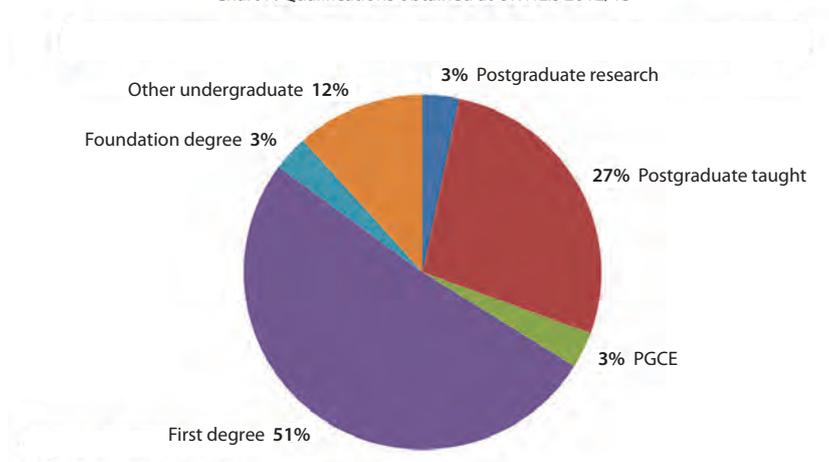
Action	Likelihood	Consequence	Comments
HEFCE decide to return to funding PGT courses at the old level	Unlikely	Status quo is resumed; course provision is maintained and recruitment sustained	
HEFCE are forced to lower the level of PGT funding even more	Quite likely	Fees have to rise to compensate and recruitment will be affected	
Fees rise to compensate for the recent fall in HEFCE funding	Likely	Recruitment will fall	Could be offset by deals/arrangements with alternative sponsors, e.g. industry
The Student Loans Scheme is extended to Master's level	Unlikely	If this were to happen, it would have a positive effect on sustaining recruitment to PGT in the future	Several models already proposed to Government, but fiscally unviable at present
More integrated courses are developed:	Some possible		
Undergraduate + Master's – e.g. MChem/MEng		Eligible for Loans for 4 years	Could be limited by HEFCE if a rush occurs
Master's + PhD – e.g. 1+3, 4-year integrated PhD		Dependent on 4-year funding schemes, which exist in some DTCs	Limits numbers of scholarships as 'funding pot' is fixed
The value of a postgraduate qualification is pushed up	Possible	More students will seek to achieve the qualifications and demand will be sustained or will rise	Requires employees to place a higher recruitment value on postgraduate qualifications
External sponsorship for a course	Definite possibilities exist	This is a win-win solution, securing the course financially, securing good student applicants and integrating with a future industry employer	The number of possible external sponsors of PGT courses is far smaller than the existing number of courses, so this is only a solution for some

will cover the costs of fees and living; however, there are still a lot of self-funded students who choose to study part-time, particularly in the non-STEMM subjects (Table 1). Approximately 25% of all PGR students (more in STEMM subjects) are fully funded by Research Councils scholarships and a further 27% by university scholarships, and partial or full funding from industry and the public sector also exists such that the majority of home/EU PGR students have some funding to pursue their studies. The home/EU PGR population is equally matched in numbers by fully funded full-fee-paying international overseas students who, because of visa regulations, are studying almost entirely full-time. So UK universities, as well as being responsible for the production of the next generation of home researchers

are also making a big contribution to the production of the next generation of researchers worldwide.

Ironically, the fees paid by home/EU students are the lowest in a university's portfolio of fees and this is because of the dual funding mechanism which also sees HEFCE funding universities according to a HEFCE algorithm-based payment dependent on the research quality assessment (RAE/REF); this is the research degree programme (RDP) component of quality-related (QR) funding. Most higher education institutions (HEIs) adjust the fees they charge to home/EU PGR students according to the standard fee that the Research Councils will pay. For PGT courses, the fee charged is much more variable and is tempered by how much the HEFCE grant is for Master's courses.

Chart 7. Qualifications obtained at UK HEIs 2012/13



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Figure 1. Qualifications obtained at UK universities 2012/13 (source: HEFCE)

Two big issues have occurred virtually simultaneously that have forced many HEIs to question their current and future PGT provision: first, undergraduate student fees and the concept of ‘graduate debt’; secondly, reduction in the financial support for PGT courses from HEFCE. This means either cross-subsidizing PGT courses from other funding streams in the university or making sure the courses pay for themselves by increasing the fees to compensate for the HEFCE decline. HEFCE bands the subjects (A to D) according to estimated costs of delivery and funds these bandings accordingly, but, across the entire spectrum of courses, the funding per head of student has fallen by between £4000 and £5500 since 2008. The prospect of raising the fees charged to compensate for this fills most academic course leaders with dread because they fear it will cripple their PGT recruitment as it will be even more off-putting for the debt-ridden newly graduated student. During 2013 and 2014, many universities have held off from fee rises across the board, but there has been an incremental drift upwards in fees, and prospective students are noticing this and voting with their feet and applications are waning. However, statistics on the profile of PGT students shows that many actually return to PGT study after a break from study for a few years and many of today’s PGT students are actually not debt-laden, but have worked to save to afford to pay for their Master’s course. Nevertheless, it is an inescapable fact that, at some point in the near future, the debt burden is going to be a major deterrent to further study.

This will inevitably threaten the supply of highly qualified and skilled personnel for the future.

For the universities, course provision is a problem as PGT courses cannot be turned on and off like a tap – it takes at least a couple of years of planning to develop a

PGT course and several more years to hone it to a point of a first-rate delivery. Once a university decides to withdraw a programme (due to lack of numbers), it is almost lost forever because the staff can be demotivated and leave, the resources lost and the motivation to deliver the course is lost from the department.

What can HEIs do to guard against the risk of losing Master’s courses from their portfolios? A matrix of options and their likelihood is given in Table 1.

What about the sustainability of PhD courses?

Although only representing only 3–4% of the total student population in the UK, the PhD is the ultimate qualification for entry into research leadership and or into an academic career. The quality of PhD training provision has risen in the last 10–15 years in the UK, with the huge stimulus on the move away from the Master–Apprentice model towards the well-trained, team-led, cohort support model that has been created through the doctoral training centres (DTCs/DTPs/CDTs) concept from the Research Councils and through Marie-Curie Initial Training Networks (ITN) and Erasmus Mundus Doctoral training schools from the EU. Furthermore, the rise in support levels for PhD students within universities through the widespread introduction of graduate schools and/or research schools has stimulated supervisors and researchers to develop a new paradigm of PhD training. This has fuelled the already high status of UK PhD training and continues to make it an attractive destination for international students to obtain their PhDs. For the first time in history, the UK now trains more international (EU + overseas) students for their PhDs (51%) than home students (49%), yet the numbers of both have risen year on year for the last 10 years. The consequence of this growth is that virtually all established universities in the UK have Higher Degree Awarding Powers and run PhD programmes. But there is a sharp contrast in numbers, and the number of PhDs awarded from individual universities reveals this (Figure 2).

The big change in policy/funding with PhDs has been with the Research Council studentships with all the research councils moving to a block-funded model of DTCs/DTPs/CDTs. A consequence of the new model has been the concentration of funding into fewer institutions and a sharp divide between the pre-1992 and post-1992 universities has emerged, but even within the pre-1992 universities, there are departments that have seen reductions (to zero) in their Research Council-funded PhDs.

Time will tell whether the Research Council experiment with the DTC model will be hailed as a success

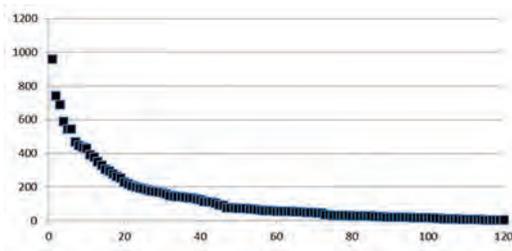


Figure 2. The number of PhDs awarded by universities in the UK in rank order (source: HESA)

or not, but, in the meantime, the unfunded institutions and departments do face something of a crisis of sustainability. Most will 'hang on in there' provided that they have a reasonable supply of international students and studentships from their institution or department or if they can attract large numbers of self-funded students through part-time models and Professional Doctorates. Since over 70% of funded PGR students are in the STEMM subjects, this also threatens to accentuate the STEMM/Art, Social Science and Humanities (ASSH) divide. In 2013, HEFCE injected an addition £40 million into PhD research funding through the QR RDP route, but it seems highly unlikely that there will be substantially more Government funding forthcoming in the near future. With this in mind, home-funded research training provision will become ever more restricted in the future, and a gulf may open up between the funding 'haves' and the funding 'have nots' that may force senior executive teams at some universities to question the sustainability of their provision. There is an inherent danger in this that is associated with academic staff morale and ambition which could have a negative effect on the UK's reputation for the future.

When combined, the changes in home funding for both PGT and PGR courses are having a dramatic effect on the future of the postgraduate landscape at UK universities. It is time for a concerted action by universities, professional societies and the employers of postgraduate students to ensure that capacity is not down-sized if we are to continue to maintain our pre-eminent position in the world research community as a preferred supplier of training for the next generation of scientists, engineers, social scientists and creative artists. A dialogue is necessary between the funders [HEFCE, DBIS (Department for Business Information and Skills), industry] and the suppliers (universities) and a transparent policy for growth, stagnation or decline is needed for universities to be able to plan sensibly for the future. Many other developed economies around the globe who are also in the grip of financial restriction have not compromised their futures and are continuing

to invest greater amounts of the GDP in research and high level skills training and we need to take heed of this and be proactive to prevent a decline in provision of postgraduate opportunities in the UK. ■

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Professor Fuller has responsibility for the strategic activities of research students at Plymouth and is currently very active with international recruitment and the sourcing of productive international research partnerships. He is also the Chair of the UK Council for Graduate Education (UKCGE) and member of the Steering Group for the European Universities Association's Council for Doctoral Education (EUA-CDE). He is a member of the UK Quality Assurance Agency (QAA) Steering Group for the UK Quality Code for Higher Education and is a member of the Higher Education Academy (HEA) advisory group on the Postgraduate Taught Evaluation Survey (PTES). He also holds the post of Professor of Plant Physiology in the School of Biological Science and has an active research group comprising five research students and one postdoc working on aspects of abiotic stress physiology in plants. His current research students come from Syria, Iraq, Kurdistan and Saudi Arabia. He has supervised 35 research students and examined over 45 from across the UK, Cuba, Pakistan, Fiji, France, Denmark and Ireland. He is an International Member of the Plant Biotechnology Research Group (BPRG), King Abdulaziz University, Jeddah, Saudi Arabia. email: mfuller@plymouth.ac.uk