

Postgraduate Consultation
Abbey 1, 5th Floor
Department for Business, Innovation and Skills
1 Victoria Street
London
SW1H 0ET

From the Physical Secretary and Vice-President Professor Alexander Halliday FRS

19 May 2015

Dear Sir/Madam,

Consultation on support for postgraduate study

The UK's higher education and research systems are vital for our national prosperity. UK researchers have produced a world-class research base that delivers substantial economic, social, health and environmental benefits by producing new ideas and discoveries, creating high-value jobs and fuelling economic growth. STEM graduates and postgraduate researchers make an important contribution to this research – these students must be well-supported throughout their training and early research careers.

This consultation seeks submissions on initiatives aimed at widening access to postgraduate study. This is a positive and welcome objective, but it is vital that any changes do not undermine the existing system of support. In particular, we are concerned that introducing a new postgraduate research loan scheme without carefully considering the complex existing landscape could result in decreased non-loan funding, a decline in academic excellence, and distortions in areas of research focus.

Taught Masters

The Society is supportive of the proposal to introduce loans for taught postgraduate students. Taught Masters programmes provide the foundation for a career in a number of STEM disciplines – in particular those with intensive content or professional requirements, such as physics and engineering. They are also vital for fields with an interdisciplinary character, since they allow students to develop skillsets that span multiple disciplines. However, the impact of any loan scheme on applicant diversity, academic standards, and overall Masters take-up should be closely monitored.

Taught Masters currently attract relatively little public funding, so a loan scheme for taught postgraduate students could open up opportunities for those currently unable to access these courses. Opening up the opportunity to pursue Masters courses to a greater cross-section of UK students would also more closely align our higher education training with that of other countries. This would make our graduates more competitive when it comes to job opportunities overseas, and would help make UK companies less dependent on recruiting from abroad to satisfy their needs for highly skilled individuals.

Perhaps the strongest argument for expanding taught Masters programmes is that many of the challenges faced by modern society will best be tackled by practitioners with more than one area of expertise. For example, to tackle climate change and improve energy policy, we need individuals who understand engineering as well as economics. To develop biotech we need individuals with a background in medicine as well as physics. To address cybersecurity threats we need people trained in ethics and international law as well as data analytics. Taught Masters programmes provide a way to achieve this broadening of expertise for individuals who do not plan to go on to postgraduate research.

Taught Masters also help train individuals for postgraduate research on important new topics. Many of the most exciting research discoveries take place at the interfaces between traditionally distinct academic disciplines – for example, plate tectonics was figured out because physicists started working in geology. Similarly, strength in mathematical, statistical and computational methods is key to progress in many of the sciences. Taught Masters provide a way of joining up these disciplines. This sort of interdisciplinary training is currently being delivered as part of doctoral programmes within some Centres for Doctoral Training (CDTs), and should be made more widely available through standalone taught Masters, as it is in other countries.

The Society also supports the proposal that integrated Masters degrees continue to be supported through the undergraduate fee structure and loan system. In a number of STEM disciplines, the integrated Masters plays a critical role in preparing students for the workforce or research, with a four-year integrated Masters now the UK norm for those pursuing a career in academic or industrial research and development.

Postgraduate research

Postgraduate research differs from undergraduate and postgraduate taught courses in fundamental ways. These differences mean that unintended consequences are more likely, and therefore greater care is required when considering possible new funding mechanisms.

- i. Postgraduate research centres on a substantial piece of academic research, making an original contribution to the research base. While PhD students also develop the skills and knowledge needed for an independent research career, the contribution they make to the research base during postgraduate study should not be underestimated. The public benefits that flow from our strong research base depend on students and early-career researchers; these public benefits mean that direct public funding is more appropriate for postgraduate research than it might be for taught higher education.
- ii. Under the current arrangements for UK students, funding is available only to excellent students, and a place in a postgraduate research programme depends on finding a suitable match between a student and a research programme/supervisor. Introducing loans for postgraduate research could break this nexus between funding and excellence, and weaken universities' incentive to select only the best students. There is a risk that the average quality of postgraduate research students could decline. It is also possible that some students could find themselves offered a postgraduate research place based on the funding available via the loan, rather than their research potential.
- iii. Student demand for postgraduate research loans would be uneven. Demand is likely to be high in disciplines where there are large numbers of self-funded students, and among students who have been unable to secure other funding. There is no reason to believe that the students and disciplines where loans are in demand would correspond to national research priorities. A more reliable way to support priority areas would be to fully and directly fund excellent students in priority subjects.
- iv. The potential for a loan system to widen access would be constrained by the size of the loan – since the proposed loan would not, in most cases, cover the full costs of a PhD, students would still need to provide some up-front funding. Students may also be unwilling to take on £25,000 in debt, particularly in addition to an undergraduate loan (and potentially a Masters loan, which would be repaid concurrently). The take-up of postgraduate study by the cohort of students paying £9,000 per year in undergraduate tuition fees also remains to be seen.

- v. The postgraduate research system seeks to balance a number of (often competing) objectives: delivering quality research in priority areas; addressing areas of national expertise shortage; facilitating investigator-driven research; and supporting high-quality students who have diverse preferences. The introduction of a loan system would affect how well-balanced these objectives are. In the first instance, attaching loan funding to the student would shift the balance toward student preferences. In response, other funders may adjust the weight they place on each of these objectives. These changes are difficult to predict, but could substantially change the way funding for postgraduate research is allocated – potentially including a weaker focus on the UK’s strategic priorities.
- vi. The existing funding arrangements for postgraduate research are both better-established and more complex than those for taught postgraduate study. Research is funded through a number of public, private and philanthropic channels. At the centre lies the publicly funded dual support system, which provides stable support to universities and allows the objectives described above to be balanced. Research Councils traditionally support PhD research through funded studentships, although in recent years there has been significant growth in CDTs and partnerships.

It is difficult to predict the effects of a new loan system on the existing funding streams. Current funding levels might persist, but be spread across more students, with the expectation that most students will take out a loan and receive only partial funding rather than a full studentship. Over the long term, there is a risk that the total direct funding available might be eroded in favour of loans. Any such changes would undermine the existing funding system and make UK postgraduate research training less attractive compared to either entering the workforce or overseas postgraduate studies. This would further weaken the UK’s pipeline of excellent researchers and threaten the strength of our future research base.

- vii. The Nurse Review of Research Councils is currently considering questions fundamental to the postgraduate research sector, including: the balance between investigator-led and strategically-focused funding; how national interests such as regional balance and economic impact should be taken into account; and whether the university sector should be the primary recipient of funding. These questions cannot be disentangled from how postgraduate research students are funded. Any new loan system should be informed by the recommendations of the Nurse Review, due to be published later this year.

These complexities, and the fact that there are no comparable international experiences to learn from, mean that the design of any loan scheme must be informed by robust data on the demand for and supply of postgraduate research places. This evidence must provide a clear understanding of demand for the various existing funding streams, the costs of research programmes to institutions, and the students who currently self-fund, including their numbers, distribution, and any other funding sources they draw upon. Based on the Society’s past analysis of this issue, we believe the data on individual students’ funding sources is neither robust nor comprehensive, due to limitations in HESA’s relevant data collections. We would be happy to discuss these issues in more detail with the consultation secretariat.

Any new loan system should also be underpinned by an evidenced-based understanding of the complexities of the broader postgraduate research landscape, including recent changes. The design of such a scheme will need to take account of possible interactions with existing arrangements and the potential for unintended consequences. It should also consider the substantial differences in the nature of postgraduate research between disciplines, for instance between the arts and sciences and between theoretical and applied subjects. The Society will shortly begin a project on PhD funding and

the impact of CDTs on the postgraduate research landscape – we would be happy to discuss this work as we scope it, and to keep BIS updated on its outcomes.

Finally, although outside the scope of this consultation, it is important to note that the immigration system plays an essential role in ensuring we have a strong supply of excellent people for UK research. The market for the best young scientific minds is an international and highly competitive one. Attracting the best international students during their research training makes them more likely to stay in or return to the UK throughout their research careers, creates links between UK and overseas researchers, and further enhances the reputation of the UK's research training system. All of these effects would strengthen the UK's research base and researcher community.

At the moment, the UK's science base is not able to attract the talent that it might, due to a combination of high international fees, relatively little funding for international students, and immigration policies and messages that are not welcoming towards international students.

An immigration system that minimises barriers to the flow of talented people would ensure a deep and wide pipeline of researchers training and working in the UK. The UK is an attractive destination for young researchers, and the right policy settings could make it even more attractive. Lowering the barriers (and perceived barriers) they face would be beneficial for individual researchers, the research community in the UK, and for people around the world who benefit from UK research and development.

Please contact Becky Purvis (rebecca.purvis@royalsociety.org or 020 7451 2261) if you have any queries or would like to discuss any of these matters further.

Yours faithfully,



Professor Alexander Halliday
+44 20 7451 2661
Sec.A@royalsociety.org