

CaSE submission: consultation on support for postgraduate study

Key points

- The UK suffers from a skills shortage across the science, engineering, technology and maths (STEM) disciplines. This is highlighted by employers as the greatest workforce threat to UK productivity and is an increasing drag on the economy.
- There is a need for the Government to encourage individuals to develop their skills and expertise beyond their undergraduate degree to address and reverse this skills shortage.
- Finance can be a barrier for many wishing to do a taught postgraduate course, especially for people from disadvantaged backgrounds, who are under-represented in STEM education.
- The proposals for loans are welcome to help address this barrier but the £10,000 per annum limit will not cover costs for all types of courses, especially in STEM subjects, which have higher costs. The current proposal will result in unintended disincentives for students wishing to take STEM courses and institutions wishing to provide them.
- The loan value should be linked to course fees so that students are not disadvantaged when choosing a STEM Masters course
- To ensure the provision of high-quality STEM courses is sustainable the Government must invest more into higher-education institutions; without this, increased uptake of STEM taught postgraduate courses will result in a thinner spreading of teaching capacity and laboratory facilities within universities and/or tuition fee inflation.
- Postgraduate research degrees merit public investment and support due to their economic and social benefits. Greater investment through well-developed routes such as the Research Councils is the most appropriate way to support postgraduate research.
- There is currently not enough information about the proposed loans for postgraduate research to comment authoritatively on their suitability but in some circumstances they may be beneficial. CaSE recommends the Government develops and consults on these plans further.
- The availability of loans must not in any way negatively impact on the quantity, quality, or value of current grant funding arrangements available; the Government should develop metrics to monitor this if it proceeds.
- The enrolment of postgraduate research students must continue to be based on the excellence of the candidate and research proposal, not on ability to fund the studentship through a loans system.

Introduction

The Campaign for Science & Engineering (CaSE) is a membership organisation aiming to improve the scientific and engineering health of the UK. CaSE is funded by around 750 individual members and 100 organisations including industry, universities, learned and professional organisations, and research charities that recognise the importance of science and engineering for the UK.

Science and engineering is a national success story. They are fundamental driving forces of our economy, catalysing innovation, creating high-value jobs, and producing great health and social benefits. This success comes despite shrinking resources and an ever-worsening skills shortage. The CBI/Accenture 2014 workforce survey found that low skills in the workforce are the primary threat to UK productivity, with 63% of businesses saying this is their top concern¹. This skills shortage is particularly acute in science, engineering, technology and maths (STEM), which are vital for economic growth².

For the UK to remain a global powerhouse of science and engineering the Government must reverse the downward trend in public investment in research and higher education to ensure that the future workforce is equipped with the skills necessary for an innovation-led economy. CaSE welcomes the Government's intent set out in the consultation document to improve support for postgraduate study and for the opportunity to respond.

Postgraduate taught Masters loans

Taught Masters courses equip students with specialist knowledge and skills that the UK needs if it is to remain a productive, innovative, and prosperous nation. It is increasingly the case that undergraduate degrees are not sufficient to provide all the training required for individuals wishing to pursue careers in economically-important STEM fields. Innovation is also becoming ever-more dependent on multi-disciplined research and development, and postgraduate courses provide students the opportunity to study across disciplines and in niche areas. The UK would therefore benefit from more workers with higher skills gained from Masters qualifications and so it is right that the Government should explore policies to increase their uptake.

As evidenced in Annex 5 of the consultation document³, the cost of postgraduate courses is often a barrier to students wishing to take them. This is especially true for people from disadvantaged backgrounds, who are also under-represented in STEM education more widely⁴. CaSE believes that everyone who is able to benefit from a Masters qualification should have the opportunity to study for one.

Providing relatively low-cost loans to students is a welcome policy that should support more people to study for a Masters qualification. The consultation document acknowledges that the £10,000 loan is not intended to cover the full cost of undertaking postgraduate education. It states that it is a "contribution towards the cost" in order to "encourage individuals to make informed decisions about whether to pursue this level of education". The fees of Masters courses vary considerably, from under £5,000 to over £15,000, with STEM courses generally being the most expensive. A

¹ CBI and Accenture, Growth for Everybody, 2014: <http://news.cbi.org.uk/news/cbi-accenture-employment-trends-survey/>

² UKCES, The supply and demand for high-level STEM skills, 2013: <https://www.gov.uk/government/publications/high-level-stem-skills-supply-and-demand>

³ BIS, Consultation on support for postgraduate study Annex 5 Evidence related to age eligibility criteria, 2015: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/415294/BIS-15-185-an-evidence-postgraduate-loan-eligibility-age-cut-off.pdf

⁴ CaSE, Improving diversity in STEM, 2014: <http://sciencecampaign.org.uk/CaSEDiversityinSTEMreport2014.pdf>

student therefore faces a disincentive to choose a STEM Masters when making their informed decision. The loan amount should be based on the tuition fee of the course so as to remove this disincentive against STEM postgraduate study.

There could also be a financial disincentive felt by institutions against STEM course provision. Universities receive little subsidy from the Government for providing Masters courses. Staff salaries, teaching laboratories, and other resources are generally funded from a central teaching budget covering undergraduate and postgraduate courses. Greater uptake of Masters driven by the availability of loans could result in a thinner spreading of resources in popular subjects if not accompanied by greater Government teaching capital investment. This could lead to a lowering of quality in subjects, especially STEM courses where laboratory facilities are harder to expand to meet demand, and/or tuition fee inflation to make up the shortfall. The Government should assess where and in which subjects uptake would be expected to increase due to the availability of loans and ensure central Government funding will support essential capacity building.

There are some parallels with the introduction of loans for part-time undergraduate study introduced in 2012, which resulted in a severe reduction in numbers of people choosing to undertake part-time study⁵. Notably, the decision to restrict loans only to people who do not already have a Masters level qualification may hinder some people from acquiring the complex set of skills necessary in some science and engineering disciplines. More research is needed into whether this might be the case and care should be taken to learn the lessons of the 2012 reforms.

CaSE 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 within or outside of academia, with a four-year integrated Masters now the UK norm for those pursuing a career in academic or industrial research and development.

Postgraduate research degree loans

Students undertaking postgraduate research degrees are a core component of the UK research workforce. Their academic papers and final doctoral thesis constitute a significant contribution to human knowledge and understanding. As such the research is valuable in its own right but also a vital part of the training process for higher-skilled workers, including scientists and engineers, which the UK needs more of⁶. The economic and social benefits of PhDs and other postgraduate research programmes merit public investment and support.

The Government's aim to leverage funding through partnerships with industry and charity to increase support for postgraduate research is a welcome and sensible approach. However, the Government's own investment plays a central role in that mission and cannot be substituted.

⁵ Claire Callender, The demise of part-time undergraduate higher education in England: who cares?, 2014: http://www.ioe.ac.uk/about/documents/About_Policies/Callender_-_FINAL3_.pdf

⁶ UKCES, The supply and demand for high-level STEM skills, 2013: <https://www.gov.uk/government/publications/high-level-stem-skills-supply-and-demand>

Government investment in postgraduate research sends a strong signal to businesses and charities that the UK is the right environment in which to invest in jobs in the long-term.

The public benefits outlined above mean that the most appropriate way to support postgraduate research is by providing greater investment through the well-developed systems of the Government research funding bodies, primarily the Research Councils. This can be used to leverage private funds whilst ensuring that postgraduate research is aligned with the UK's wider research priorities and industrial needs (the Nurse Review is currently looking at how this can best be achieved⁷). Greater investment delivered in this way should result in a better alignment of the number of PhD-qualified individuals with the workforce needs of industry and academia. This is an important and necessary target to raise productivity and strengthen the economy.

Increased Government investment in postgraduate research programmes could also improve the student experience and yield greater returns from the research; for example, providing funding for four years rather than three in some areas of research could result in more complete projects and more valuable research outcomes. This approach has already been taken in some institutions with block doctoral training grants; the Government should assess the value of this approach. Greater investment would also allow the Research Councils to expand their funding programmes to meet new and emerging needs in science and engineering such as big data science, which is increasingly being recognised as important in many fields of science and an area of acute skills shortage for the UK.

As the consultation document states, 37% of postgraduate research students are self-funded. It is therefore likely that even with increased Government investment, demand from students for postgraduate research qualifications would still exceed the availability of fully-funded positions, especially in non-STEM disciplines. As self-funding is already commonplace, it appears appropriate for the Government to make loans available at lower costs for those people not able to obtain grants. But this must not negatively impact on the quantity, quality, or value of current grant funding arrangements available.

The introduction of loans to cover any cost of undertaking a postgraduate research programme that would currently be covered by Government funding would constitute a fundamental shift in approach to funding research. Government policy must remain that the state funds STEM postgraduate research programmes. Research is a societal good meriting public funding and people conducting that research, including PhD students, are in practice, workers. In the same way that apprentices deserve to be paid for the work that they do whilst acquiring new skills, so do people undertaking post-graduate research.

The introduction of loans must be very carefully considered and supported by evidence but it may be impossible to predict the effect it has on the funding landscape. The Government should develop and consult on metrics to monitor this if loans are introduced.

⁷ BIS, Nurse review of Research Councils, 2015: <https://www.gov.uk/government/consultations/nurse-review-of-research-councils-call-for-evidence>

The consultation is not clear on exactly who the intended recipients of loans for postgraduate research are to be or for what purpose the money would be used, if there is to be any restriction at all. Are the loans intended to allow more people to pursue postgraduate research or to support those who would do so anyway? Are they to allow more people to get post-graduate research qualifications in any discipline, or only disciplines that are not covered by the Research Councils? Are the loans to be used to pay fees, research costs, or living costs? More detailed proposals should be consulted on before any decisions are made.

Finally, the world-leading quality of UK research is in part due to long-established allocation decisions based on excellence. This must not change. The selection of postgraduate research students by academic institutions must continue to be based on the excellence of the candidate and research proposal, not on ability to fund the studentship through a loans system. This would devalue the Doctorate as a qualification, harm the reputation and quality of UK research, and potentially mean that loans are not able to be repaid in full, resulting in financial loss to the taxpayer.

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