

Consultation on the White Paper for the Further and Higher Education (Wales) Bill

A response from the Society of Biology to the Welsh Government

24th September 2012

The Society of Biology is a single unified voice for Biology: advising Government and influencing policy; advancing education and professional development; supporting our members, and engaging and encouraging public interest in the life sciences. The Society represents a diverse membership of over 80,000 - including practising scientists, students and interested non-professionals - as individuals, or through the learned societies and other organisations listed below.

Summary

Science contributes enormously to economic and social prosperity, and the life sciences are a particularly successful story across the United Kingdom. In Wales, the life sciences sector contributes more than £1.3 billion to the Welsh economy annually¹ and is recognised as one of three priority areas within the Welsh science strategy². The outputs from higher education (HE) are both new knowledge and highly skilled people which are essential for a successful science sector. It is vital to increase and exploit our knowledge and skills in areas of national strength such as the biosciences.

Ten per cent of the UK life science workforce is based in Wales, compared to five per cent of the population³, and to meet this workforce demand it is vital that Higher Education Institutions (HEIs) are not disincentivised from offering high quality bioscience courses. Laboratory and fieldwork-based teaching is expensive but crucial to science degrees, and to the provision of skills that are scarce in the workforce. We must ensure that the funding changes ahead do not make these teaching activities economically unviable for HEIs and we welcome the acknowledgement in the White Paper that '*change must not take place at the expense of the quality of HE provision or the reputation of our institutions*'.

Teaching Funding

The White Paper outlines new funding arrangements for Welsh HE, and the shift of HE teaching funding from the Higher Education Funding Council for Wales (HEFCW) teaching grant to student fee grants and fee loans. The paper describes what this will mean in terms of student support, explaining that '*the Welsh*

¹ Welsh Government Fast Facts - http://business.wales.gov.uk/FS4BWales_files/Life_Sciences_Fast_Facts_WEB_English.pdf

² Science for Wales, Welsh Government (2012) <http://wales.gov.uk/docs/det/publications/120306scienceen.pdf>

³ Welsh Government Fast Facts - http://business.wales.gov.uk/FS4BWales_files/Life_Sciences_Fast_Facts_WEB_English.pdf

Government will provide a non means tested grant for the balance of fees over and above current fee levels' so that 'full-time students ordinarily resident in Wales who commence their first undergraduate degree from 1 September 2012 will pay no more in real terms for their tuition than they would have in the 2011/12 academic year'.

However, there is less information on the support available for HEIs providing these degrees. There is little information on what (if any) funding will be available from HEFCW, and it states that *'by the 2014/15 academic year it is possible that some institutions will no longer be in receipt of teaching grant from HEFCW.'*

Science subjects are inherently costly to teach, and there are few cheap options for teaching them well, principally due to the vital elements of laboratory and fieldwork, which place demands upon both resource budgets and staff time. Transparent Approach to Costing (TRAC) data released by HEFCE⁴ show that the average cost of undergraduate degrees in the biosciences and related disciplines (e.g. pharmacy and pharmacology, anatomy and physiology and agriculture and forestry) lies in the range £8.8-£9.7k whereas costs for the humanities and social sciences are in the range £6.3-6.4k. We must not make it financially disadvantageous to HEIs to recruit undergraduate students to science subjects, as this would cause pressure to decrease expensive practical content from bioscience degrees, leading to bioscience graduates who will lack the necessary practical skills and experience for employment.

If we intend to supply our graduates with the skills that they need in the workplace then we should be looking to equip graduates with these techniques within their undergraduate study. There is no acceptable alternative to students undertaking field and laboratory work to give them both an authentic experience of a practical subject such as the biosciences, as well as valuable transferable skills. HEFCW will need to consider how practical teaching can be appropriately supported in any funding regime. We believe that it is essential that HEFCW provide additional funding for science subjects to cover the costs of providing an appropriate student learning experience.

Strategic Funding

The White Paper states that the Welsh Government will *'seek a provision in the Bill to enable HE provision to be funded directly by Welsh Ministers in instances where it is strategically appropriate to do so.'* We would welcome further information on what evidence base these funding decisions will be made, on how the term *'strategically appropriate'* will be defined and therefore identified for further funding, and what a strategically important subject would look like.

The Welsh Government has already identified the life sciences as a business priority sector which will be key to the economy of Wales⁵, and cites that the sector employs over 15,000 people and contributes £1.3 billion annually to the Welsh economy⁶. More recently, the Welsh Government's 'Science for Wales'

⁴ Student number controls and teaching funding: Consultation on arrangements for 2013-14 and beyond, HEFCE (2012) <http://www.hefce.ac.uk/pubs/year/2012/201204/>

⁵ Department for Business, Enterprise, Technology and Science <http://business.wales.gov.uk/bdotg/action/layer?site=230&topicId=5001584213>

⁶ Welsh Government Fast Facts - http://business.wales.gov.uk/FS4BWales_files/Life_Sciences_Fast_Facts_WEB_English.pdf

strategic agenda⁷ highlighted the life sciences as one of three Grand Challenge priority areas, and acknowledges the impact of heavy investment in education and research. The actions listed in this document focus on research effectiveness and collaborations, but do not touch on the vital role of education which feeds this process. In science subjects, there is an intricate relationship between teaching and research, in terms of space and facilities, financial sustainability, student contact with researchers, academic staff time and workload, and the supply chain of new researchers. We need to ensure that graduates from Welsh HEIs have the skills and the opportunities to continue their studies should they wish, providing the next generation of researchers.

We hope that the Government's support of the life sciences sector as a whole will highlight the need for biological disciplines to be supported as higher education priorities. We recommend that the Welsh Government work with organisations such as the Society of Biology and the Research Councils such as BBSRC and NERC in determining and disseminating these priorities.

The White Paper suggests that strategic funding will be necessary when there are '*significant failures to meet identified employer needs and learner demand in identified priorities.*' Graduate skills gaps have been documented across many areas of the biosciences, from biomedical areas including translational medicine, *in vivo* sciences, and biomaths⁸, to environmental skills such as taxonomy, modelling and soil science⁹. The BBSRC¹⁰ has identified bioscience subjects which are strategically important for the UK as a whole, and either already vulnerable or likely to become so and highlighted whole animal physiology (*in vivo* sciences), industrial biotechnologies, plant and agricultural sciences, and systematics and taxonomy were highlighted.

The White Paper lacks information about the mechanism of support for subjects which have been identified as strategically important and vulnerable, and feature high cost practical laboratory and field work elements. It is important that this mechanism is made transparent.

Collaborations

The White Paper promotes collaboration and partnerships as a way of offering practical benefits to students. We suggest increased liaison and co-operation with further bodies such as industrial employers, professional bodies, statutory governmental bodies and non-governmental organisations, as well as HE and FE, although note that such strategies will carry additional resource burden.

A number of reports have claimed that UK graduates do not have the necessary skills for employment after graduation¹¹. Engagement between the key stakeholders listed above will help to ensure that graduates are "fit for purpose" and ready to work in the life science sector. The Welsh Government should address this by encouraging more interactions between employers and HEIs, in terms of both sandwich placement

⁷ Science for Wales, Welsh Government (2012) <http://wales.gov.uk/docs/det/publications/120306scienceen.pdf>

⁸ Skills needs for biomedical research, ABPI (2008) <http://www.abpi.org.uk/our-work/library/industry/Pages/skills-biomedical-research.aspx>

⁹ Review of the Skills Needs in the Environment Sector www.nerc.ac.uk/funding/available/postgrad/skillsreview/

¹⁰ Strategically Important and Vulnerable Capabilities in UK Bioscience, BBSRC Bioscience Skills and Careers Strategy Panel (2009) http://www.bbsrc.ac.uk/web/FILES/Reviews/0905_bioscience_research_skills.pdf

¹¹ Ready to grow: business priorities for education and skills, CBI (2010) <http://www.cbi.org.uk/pdf/2010-cbi-edi-ready-to-grow-business-priorities-for%20education-and-skills.pdf>

provision, employer sponsorship of student places or courses, innovation and enterprise, and gaining evidence-based feedback from employers on the employability of students. Life sciences are seen as an integral area for the future economic development of Wales and there is a need for joined-up thinking and implementation to ensure that this is achievable.

Quality assurance and enhancement of HE provision

We welcome the aim for *'institutions to strive beyond maintaining academic standards and to focus on improvement to ensure that students are provided with a high quality learning experience.'*

The consultation suggests that the Welsh Government will *'seek to ensure greater involvement of learners in the quality process.'* We acknowledge that students are one of the biggest stakeholders in HE, but the Welsh Government needs to consider carefully and judiciously how it will incorporate student feedback and surveys into quality assurance. There is some uncertainty over the reliability of student satisfaction data which is based on evaluative feedback from students with limited experience of other HEIs and without experience of what is required to be an employable graduate. Institutional damage may be caused by either an individual lecturer's performance or the need for students to engage with subjects which are not overly enjoyable but necessary to provide a robust foundation in the subject. Assessment of teaching quality should include a strong focus on student learning, not only student satisfaction. Such an approach should be supported by a national recognition of the need to shift way from didactic delivery of education to a more equal understanding of the rationale of underlying pedagogy by staff and students.

If quality assurance (QA) responsibilities are entirely transferred to HEFCW, we would hope that they engaged with the Quality Assurance Agency (QAA) which has overseen HEI standards in the UK for many years. A body that looks specifically at Welsh HEIs is not necessarily a bad thing, but must keep contact with the UK wide infrastructure to ensure Wales fits into wider QA structures across the UK.

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The Society of Biology is pleased for this response to be publically available. For any queries, please contact Society of Biology, Charles Darwin House, 12 Roger Street, London, WC1N 2JU. Email: education@societyofbiology.org

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