

“THE FUTURE SUSTAINABILITY OF THE HIGHER EDUCATION SECTOR, PURPOSE, FUNDING AND STRUCTURES”

Evidence from the Royal Society of Chemistry to the Education and Skills Committee

The Royal Society of Chemistry is the largest organisation in Europe for advancing the chemical sciences. Supported by a network of over 43,000 members worldwide and an internationally acclaimed publishing business, our activities span education and training, conferences and science policy, and the promotion of the chemical sciences to the public.

The main points the RSC wishes to make are:

1. The Higher Education Funding Council for England (HEFCE) has identified chemistry as a strategically important but vulnerable subject. Strategically important because chemistry is the central enabling science underpinning innovation in a knowledge based economy, and is the key science upon which advances in healthcare and sustainability is based. Vulnerable, because there have been a number of closures of chemistry programmes in HE resulting in restricted access to chemistry education, a reduction in the diversity of provision and reduced opportunities for business to interact with and gain from academic research and innovation.
2. Recently HEFCE has taken some steps to address the issues. It has provided funding to enable the RSC to help universities increase their outreach activities to stimulate demand from students and help HE to develop their curricula. It has provided much needed additional funding for teaching chemistry via its block grant to institutions, but a funding gap remains. So far measures are restricted to England. The funding authorities elsewhere in the UK have not shown the same recognition of the issues facing chemistry teaching provision and have not taken action.
3. It is apposite that this Inquiry follows on from the Committee's Inquiry into the impact on its Bologna Process. UK government and UK HE have not participated fully in the Process and as a consequence the UK is not reaping the benefits of reform that are evident elsewhere in Europe. A comprehensive system of chemistry based education for the UK requires the following features.
 - (i) two year programmes in the fundamentals of the chemical sciences and their application with emphases on developing competences for process operations or at the junior technical level, including for school laboratory technicians.
 - (ii) a very wide range of three year bachelors (1st cycle) programmes in which the contribution from the chemical sciences ranges from a minor supporting role to being the major component. Such programmes make a major contribution to a well educated citizenry in addition to being the source of many eventual practitioners across the range of scientific, technological and healthcare occupations. Some programmes need to be theoretically rigorous and technically oriented equipping graduates to occupy leading technical roles.

- (iii) intensive programmes to masters level (2nd cycle) of up to two years duration, leading on from first cycle qualifications in which the chemical sciences are a major component and intended to lead to professional level practices. There should be a mix of programmes ranging from broadly based to those specialist interdisciplinary areas.
 - (iv) three to four year programmes leading to doctoral degrees (3rd cycle) educating researchers and research leaders in the chemical sciences and contributing to the research missions of institutions.
4. The RSC's detailed responses to the issues raised in the terms of reference of the Inquiry are attached.

THE FUTURE SUSTAINABILITY OF THE HIGHER EDUCATIONS SECTOR: PURPOSE, FUNDING AND STRUCTURES

Detailed responses from the Royal Society of Chemistry

The Role of Universities

1. *What do students want from universities?*

Students should expect to gain from their HE experiences skills that fit them for employment, to participate in and hold leadership positions in a democratic society.

2. *What do employers want from graduates?*

The ability to transfer the knowledge and skills gained whilst in HE to employment.

3. *What should the government, and society more broadly, want from HE?*

The Committee has identified societal needs in the points associated with this question.

University Funding

4. *Is the current funding system fit for purpose? Is the purpose clear?*

The purpose is clear, but the current system is not fit for purpose. There is insufficient resource overall and the relative funding between subjects is inappropriate.

The current system is too geared to what universities wish to provide and what 18 year olds wish to "purchase". The mechanisms for ensuring that national needs are met are either not appropriate or insufficiently used.

5. *What are the principles on which university funding should be based?*

The principles should be a balance of:

- autonomy for universities, ensuring freedom of thought;
- enabling students to study what they want at a convenient location;
- enabling Government, on behalf of society, to procure the knowledge base and skills the country requires;
- enabling the private sector to engage in partnerships with HE for mutual benefit.

6. *Should the £3,000 cap on student fees be lifted after 2009 and what might be the consequences for universities and for students, including part-time students?*

No comment.

7. *What should the Government be funding in HE and by what means?*

Government should part fund (with students) sub degree, bachelors and masters level programmes, fund research infrastructure and some specific research programmes.

8. *Should central funding be used as a lever to achieve government policy aims?*

Yes, government funding should be used as a lever to achieve its policy aims. No, the balance is not currently correct. Government needs to be more active in procuring what society requires.

9. *Should research funding be based on selection of 'quality'? How should quality be defined and assessed? How might this drive behaviour across the sector?*

Yes, research funding should be based on quality measures which should be defined and assessed using a combination of metrics and peer review appropriate to the subject area. A mix of measures must be used to reduce the risk of unintended consequences.

10. *How can leading research universities reach internationally competitive levels of funding? Should limited central-Government funding be directed elsewhere?*

To reach internationally competitive levels of funding, more funding must be provided.

11. *How well do universities manage their finances, and what improvements, if any, need to be made?*

No comment.

12. *Are some parts of the sector too reliant on income from overseas student?*

In principle internationalisation of HE is good thing. However, any organisation that is overly dependent on a single source of income that cannot be guaranteed puts itself, and therefore its publicly funded activities, at risk.

The Structure of the HE Sector

13. *Is the current structure of the HE sector appropriate and sustainable for the future?*

No, the current structure's not appropriate. The three cycle system, widely adopted elsewhere in Europe through the Bologna Process provides greater flexibility than the (essentially) two cycle system prevalent in the UK. Please see our separate submission on this issue.

The current degree classification (which now mainly operates only on a three point scale) has outlived its usefulness. A transcript based system of records of attainment needs to be more fully developed and promoted.

14. *How well do structure and funding arrangements fit with ‘diversity of mission’?*

The current structures and funding arrangements do not sufficiently fit with “diversity study”. A three cycle system, with a vibrant range of sub degree offering, and including part-time, distance and technically rigorous training programmes is required.

15. *Is the current structure and funding affecting growth of HE in FE and part-time study?*

Science has essentially disappeared from FE and, outside the Open University, is almost entirely full-time. This lack of provision is largely caused by funding regimes.

16. *How important are HE in FE and flexible learning to the future of HE? Would this part of the sector grow faster under different structure and funding arrangements?*

FE needs more freedom to develop programmes appropriate to its own market. The key is for links between the sectors that allow for progression with credit into HE.

17. *Can, and should, the government be attempting to shape the structure of the sector?*

Yes. The Government cannot be completely “hands off”. It has to ensure that HE fulfils the roles identified in 1-3 above. It must guide and enable institutions to be forward looking in accomplishing their missions, intervening when there is a risk that national needs may not be fulfilled.

18. *Is the government’s role one of planning, steering, or allowing the market to operate?*

The current market is not a pure market and probably can never be. See 17 above.

19. *Should there be areas of government planning within HE – e.g. for strategic subjects?*

Yes. Currently there are issues concerning strategically important but vulnerable subjects. Please see the main points at the beginning of our evidence.

20. *What levers are available to the government and how effective are they?*

The only real lever is funding. Legislation should be avoided.

21. *Is there a clear goal for the future shape of the sector? Should there be one?*

No. The goal should be a vibrant, flexible system that has the human and financial capacity to adapt.

22. *Is there a clear intention behind the balance of post-graduate and under-graduate international students being sought? Is this an area where the market should be managed? Can it be managed?*

No. This is an area that should not be managed, save for ensuring opportunities for students and the issue of risk identified in 17 above.

A D Ashmore
December 2006