

Post-16 Skills Training

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 we wish to make in respect of chemistry based occupations are:

1. There is a need to raise skills to a minimum standard, level 2, to underpin the UK economy.
2. For the chemicals using industries (broadly defined) level 2 in science, IT and related technical areas is too low. The minimum to allow a technician or operative to function at a basic level is level 3.
3. The Government's target of 50% of the population to enter HE (which we support) inevitably means that there is severe competition for young people qualified at level 3 (university entrance level) with very few choosing employment. There needs to be a substantial improvement in the careers advice provided to young people in order that they can make well informed choices.
4. There is now little provision in the FE sector for science based training even to level 3 and almost none beyond that level. Consequently the universities are and will need to be the source of education and training for skilled technicians and scientists.
5. The Skills Network Group of the Chemistry Leadership Council identified that "... the chemicals industry has significant skills gaps at both plant operative and graduate levels". ("Skills for the 21st Century", Chemical Industry, July 2004).
6. There are examples of good practice. The shortage of skilled technicians, in both laboratories and manufacturing plants is being addressed in part by apprenticeship schemes in the North West (Chemicol) and in the Yorkshire and Humber region (CATCH). These schemes are best done regionally in partnership with industry and more of these schemes should be made available to FE students and those in employment. The number of these schemes is limited and this good practice should be replicated regionally across the UK but progress is likely to be severely restricted by lack of provision in FE (4 above).
7. From 3 & 4 above, it follows that employers have difficulty in recruiting, training and upskilling operatives. In part this has to be addressed by employers themselves in making technician and operative jobs attractive, well rewarded and providing scope for progression. The latter requires external support which the education and training system struggles to provide.
8. The demographic profile within the chemicals using industries means that upskilling the existing workforce is at least as important as future recruitment. Opportunities for upskilling are similarly hampered by lack of provision in FE and

by an over-regulated approach that inhibits training providers from accessing funds. There are too many external bodies and hurdles to overcome in securing approval for course provision and qualifications that meet the needs of employers, their staff and fit national qualifications frameworks.

- 9 It is likely that in ten years the chemical using industries will require employees to be more highly skilled, and technologically literate to enable them to work more flexibly.
10. In respect of graduate level skills the current situation with regard to university chemistry provision is a cause for concern. The recent closure of a number of university chemistry departments will mean that if demand for chemistry courses is raised through initiatives such as the *Chemistry: The Next Generation (part of the HEFCE funded Chemistry for our Future programme being managed by the RSC)* sufficient places may not be available. This initiative targets students who are currently underrepresented in HE and the opportunity for local access and part time provision will be very important for some of these students. Of particular concern is the geographic location of chemistry provision and the type of courses available. Part time provision and technically orientated courses in the chemical sciences have been significantly reduced in recent years.
11. The need to ensure that key skills are developed through the subject has been recognised and addressed in many university courses. The need for key skills, as articulated by employers, has in many cases now generally been incorporated into courses. The RSC has produced an Undergraduate Skills Record (USR) and a Postgraduate Skills Record (PSR) for the chemical sciences. The USR and PSR assist students in identifying the key skills they have developed during their studies. The USR and PSR are now widely used in chemical science courses (indeed other disciplines have also been keen to use the USR and PSR).
12. The Government's skills agenda pays insufficient regard to the education and skills required for innovation in the science based industries. Our response to the Committee's Inquiry into the Bologna process, and in particular Masters level education is relevant here (attached for convenience).

Post-16 Skills Training

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

We have the following additional general comments relating to the terms of reference of the Inquiry.

1. In respect of a demand led system of education & skills training, employers have not, historically been very good at predicting needs and it may be unreasonable to expect them to do so. The primary purpose of the education system is to develop capability (which necessarily includes employability) and secondarily to be enabled to be responsive to immediate needs, which may be short term.
2. The design of qualifications is a technical matter and they must also satisfy the needs of learners for transferability when moving between employers and employment sectors. The role of employers is to ensure the requirements for employment are clearly articulated and met by the assessment process, rather than in designing the qualification.
3. There is a need for rationalisation of credit and qualifications frameworks which are poorly understood. Unfortunately current efforts are too inward looking within the UK and are being carried out by organisations with vested interests. The UK is part of a global market place. Credits, qualifications and the requirements on which they are based must be internationally recognised and compatible with systems elsewhere.
4. Additionally, lessons need to be drawn internationally on how employers, and other staff, can be incentivised to develop a learning and training culture.