



Department  
for Education



Department  
for Business  
Innovation & Skills

## The Future of Apprenticeships in England: Next steps from the Richard Review - Response form

A copy of the consultation on **The Future of Apprenticeships in England: Next steps from the Richard Review** can be found at:

<https://www.gov.uk/government/consultations/future-of-apprenticeships-in-england-richard-review-next-steps>

You can complete your response via the [online survey](#)

Alternatively, you can email or post this completed response form to:

Postal Address:

Celia Romain  
BIS/DfE Joint Apprenticeships Unit  
Department for Business Innovation and Skills  
Orchard 1  
1 Victoria Street  
London  
SW1H 0ET

Email: [apprenticeships.consultation@bis.gsi.gov.uk](mailto:apprenticeships.consultation@bis.gsi.gov.uk)

The Department may, in accordance with the Code of Practice on Access to Government Information, make available, on public request, individual responses.

The closing date for this consultation is: **22 May 2013**

## Confidentiality & Data Protection

Please read this question carefully before you start responding to this consultation. The information you provide in response to this consultation, including personal information, may be subject to publication or release to other parties. If you do not want your response published or released then make sure you tick the appropriate box?

- Yes, I would like you to publish or release my response
- No, I don't want you to publish or release my response

### Your details

Name: Nicola Hannam

Organisation (if applicable): The Science Council

Address: Hodgkin Huxley House, 30 Farringdon Lane, London EC1R 3AW

Telephone: 020 3434 2021

Email: n.hannam@sciencecouncil.org

Please tick the boxes below that best describe you as a respondent to this consultation

- Business representative organisation
- Independent Training Provider
- College
- Awarding Organisation
- School
- Charity or social enterprise
- Individual
- Legal representative
- Local government
- Large business (over 250 staff)
- Medium business (50 to 250 staff)
- Small business (10 to 49 staff)
- Micro business (up to 9 staff)

- Professional body
- Trade union or staff association
- Other (please describe)

## Introduction

The Science Council was established in 2003. It is an umbrella organisation for learned societies and professional bodies in science and currently has 40 member organisations drawn from across science and its applications: a list of member organisations is attached. In addition to providing a mechanism for the sector to work collectively, the Science Council develops and leads collaborative projects working with member bodies and the wider scientific community: examples include the Future Morph website<sup>1</sup> designed to provide young people with information about careers opportunities, and analysis of the UK Science Workforce.<sup>2</sup>

Collectively our member bodies represent over 400,000 individual members, including scientists, teachers and senior executives in industry, academia and the public sector.

The Science Council works to advance the professional practice of science and since 2004 has awarded the professional qualification of Chartered Scientist (CSci) with 15,000 individuals registered. It is now leading an initiative that aims to raise the profile, aspirations and retention of technician and graduate scientists by developing new professional registers at these levels (Registered Scientist and Registered Science Technician); these were launched early in 2012. In recognition of the value of achieving greater coherence between science, engineering and technology professions, the Science Council has worked with the Technician Council<sup>3</sup> to establish a framework of standards at technician level: see the table below describing how the structure aligns for science and engineering.

<b>QCF Level</b>	<b>Professional titles in engineering (and post-nominals)</b>	<b>Professional titles in science (and post-nominals)</b>	<b>Typical qualifications possessed</b>
3-4	Engineering Technician (EngTech)	Registered Science Technician (RSciTech)	Advanced Apprenticeship, A-Levels, BTEC National, etc
5-6	Incorporated Engineer (IEng)	Registered Scientist (RSci)	Higher Apprenticeship HND, Foundation Degree or Bachelors' Degree
7+	Chartered (CEng)	Chartered (CSci)	Masters' Degree

Professional registration offers a number of benefits for employers including: assurance that individuals have the level of competence and experience they seek, the ability to demonstrate that their staff undertake continuing professional development to maintain their competence and also that they adhere to an independent ethical code. For individuals, professional registration recognises their achievements and continuing commitment to advancing their competence, offers the possibility of increased earnings and, through the associated membership of a professional body, provides connection to a wider community of professionals to share learning, knowledge transfer and mutual support.

<sup>1</sup> <http://www.futuremorph.org/>

<sup>2</sup> *The current and future UK science workforce* TBR, Sept. 2011  
<http://www.sciencecouncil.org/content/science-workforce>

<sup>3</sup> <http://www.professional-technician.org.uk>

In recent years science careers have been considered to be predominantly available only to graduates or graduate level workers. However, the Science Council's UK workforce research published in 2011 showed the high importance of non-graduates to science and to science based industries. There are numerous other studies that have highlighted skills gaps and shortages across science and engineering with some reports predicting a need for upwards of 450,000 new STEM based technicians by 2024.

There are a number of reasons for this increasing demand for non-graduates with science skills, including the increasing application and use of science and technology in knowledge intensive sectors of the economy – from manufacturing to health, retail and environment, regulation and safety, food, business and public services; an awareness that demand for science skills is not only about the search for new knowledge and teaching but are also necessary to maximise incremental advances in technology and services as well as foster, and the application of existing knowledge in a wider range of sectors. There is also recognition that demographic pressures mean it is unlikely that skills demand will be met entirely from younger new recruits to the science workforce and that there is a need to drive up the skills of the existing UK science non-graduate workforce.

The Science Council acknowledged that more needed to be done to both recognise and understand the role and contribution of technicians to science and its applications, and to establish science technician as a career worth aspiring to. It should be noted that apprenticeships in science are not as well established as they are for engineering; the Science Council believes that establishing increasing numbers of Advanced Apprenticeships in science occupations will be part of delivering the objective of increasing the status and number of science technicians in the UK workforce.

Our interest in Higher Apprenticeships relates to the need to provide a wider range of routes to higher education in order to widen access and the diversity of the science workforce.

By its very nature, science is a developing and evolving field, as businesses adapt to these developments so the job roles change over time. Careers are moving away from one employer for life and the Science Council therefore strongly agrees with the Government's conclusion that apprenticeships must train individuals for occupations rather than specific jobs. An apprenticeship should provide skills and knowledge that are valuable to more than one employer or role and meet the broader requirements of the sector. For example analytical chemistry and microbiology techniques are used for quality control within the water industry but the skills and knowledge will also be relevant to other sectors applying sampling techniques for quality assurance, for example, in the food, health or agriculture sectors. Linking apprenticeships to professional registration can demonstrate this transferability as the professional standards are designed to apply across the profession and across employment sectors.

1. The government agrees that Apprenticeships should be designed for and targeted at those at the outset of a new job role or occupation, to train them in the skills needed for that job and to provide a springboard for their future careers. This includes helping people to advance within their existing employment, where the Apprenticeship is firmly focused on training for a job at a higher skilled level. Most important is that substantial learning takes place, with the application and practice of new knowledge and skills in a real workplace. For those already experienced and competent in their roles, Apprenticeships will not be the right approach – unless they are advancing to a substantially higher skilled role.

### **Question 1: How can we ensure that every Apprenticeship delivers substantial new skills?**

The Science Council is pleased that the government has accepted the recommendation that apprenticeships be redefined to target those who are new to a job or role that requires substantial training. It is important that the apprenticeship brand is protected in this way.

Professional bodies in science sectors are well placed to contribute to the development of apprenticeships and the skills outcomes that must be achieved through this training route. They can ensure that the new skills delivered through apprenticeships are appropriate and current as well as assure employees that the training will deliver benefit beyond a single employer, ensuring that an individual has gained transferrable skills that contribute to the advancement of the sector, and the UK economy and society as a whole.

The recognition of experience and training for experienced workers can also be achieved through professional registration.

2. The Richard Review recommends that every Apprenticeship should be based on employer-designed industry standards. It recommends that these new standards should focus on outcomes and mastery of the occupation or major job role, and should replace Apprenticeship frameworks, the current qualifications which comprise them and the national occupational standards which underpin them. The new standards would set out simply and clearly what employee in that occupation or major job role will need to be able to do.

The government agrees, and believes that employers should take responsibility for designing these new standards. We are seeking views on the best way to bring employers together to do this – for example through a competition, or a facilitated or collaborative approach.

### **Question 2: How should we invite and enable employers to come together to design new standards for Apprenticeships?**

The Science Council supports the proposal that employers should play a strong role in setting standards and also supports the proposal that where existing standards are recognised these should describe the outcomes for apprenticeships.

Professional bodies in science have a long history of providing public benefit through the management and oversight of professionals working in their fields. The vast majority are charitable organisations and many were established by Royal Charter. They are charged with sustaining, developing and sharing knowledge as well as ensuring that professional practice is evidence based and continues to develop and improve as our scientific knowledge grows. They are accountable to Privy Council, the wider public and to their membership.

In order to deliver on their objectives, professional bodies in science work with all key stakeholders with an interest in both the development of the knowledge base on which their professions depend and the stakeholders with an interest in the professional practice of the discipline: this includes establishing relationships with employers, awarding organisations and education and training providers (from primary school through to higher education).

This modus operandi enables professional bodies to develop a well-informed overview of the knowledge, skills and education needs in their fields, both for the short and long term. Scientific and technological change is advancing continuously and ever more rapidly into the practice of science and all levels, including for non-graduates. The professional bodies play a key role in supporting professionals in keeping up-to-date and maintaining competence as the employment sectors evolve and change. The majority now operate in global sectors and will be aware of global demographic trends and the global skills pipeline to inform their work in contributing towards UK competitiveness. Transferability and multi-disciplinarity have become ever more important in this environment.

The Science Council also has a broad base for stakeholder engagement. Its standards for its professional registers<sup>4</sup> were established following extensive consultation with employers, professional bodies, Sector Skills Councils, training providers, Higher Education Institutions and Further Education colleges. In addition, through working with partners in the Technician Council, the Science Council has ensured that its professional standards for science technicians map to those for registration in other technical professions, such as engineering.

The Science Council professional body members work with employers in their sub-sectors to interpret and apply the registration standards as appropriate. The overarching aim for the Science Council professional registers is to bring the standards together into a simple framework that prevents fragmentation and helps employers understand and access the system. Professional registration provides recognition for knowledge, skills and experience and the potential for progression to higher levels of registration. The framework also aids individuals and those advising them on appropriate entry points and pathways.

The Science Council believes that an overarching standard set using professional bodies as a conduit to employers benefits individuals by supporting the development of skills that are transferrable between employers and sectors, for example, skills and knowledge relating to analytical chemistry and microbiology techniques used for quality control within the water industry will also be relevant to other industries applying sampling techniques for quality assurance, in the food, health or agriculture sectors. This transferability is of particular interest to young people as demonstrated by the recent “Closing the Gap” report.<sup>5</sup>

3. The Richard Review recommends that the government should set criteria that the new Apprenticeship standards should meet, as below. This is that they should:

- be stretching;
- deliver transferable skills;

---

<sup>4</sup> <http://www.professionalregisters.org/>

<sup>5</sup> *Closing the Gap PWC, Dec 2012* <http://www.educationandemployers.org/research/taskforce-publications/closing-the-gap/>

- have significant buy in across the sector, including from SMEs, and be deliverable by small employers;
- require substantial training and take more than a matter of months to become competent at – involving training significantly beyond that offered to all new staff;
- include skills which are relevant and valuable beyond just the current job, supporting progression within the sector; and
- reflect a real job, not generic skill

**Question 3: What are your views on the proposed criteria for Apprenticeship standards as set out in section 2 of the document?**

We agree that there is value in the government setting criteria to achieve consistency in the quality of apprenticeships in order to foster support for the apprenticeship and technician brands. For science, this quality assurance could be readily achieved by the link to professional registration: over 15,000 individuals have already registered with the Science Council and with the introduction of the additional levels of registration this continues to grow. We agree where professional registration does not currently exist the proposed criteria could provide a baseline for the development of standards. Where new standards need to be developed these will need to be accompanied by an appropriate independent assessment method, as is the case for professional registration.

The Science Council supports strongly the requirement that new standards should include skills which are relevant and valuable beyond just the current job, supporting progression within the sector. The framework of registration standards has been developed for this purpose; consultation with educationalists, in addition to employers, has ensured in addition that they facilitate progression to further study.

4. The Richard Review recommends that there should be just one Apprenticeship standard and qualification for each occupation or major job role. He proposes that these should set out what an Apprentice should be able to do and know at the end of their Apprenticeship, in a way that is relevant and meaningful for employers.

The government recognises the strong arguments set out in the Review that there should be only one standard. We also recognise that for some sectors the nature of individual jobs may vary significantly between employers, even for job roles that are nominally the same. We need to find a solution to take account of this – for example through a “core and options” approach for each standard and qualification, increasing their flexibility to different settings and contexts whilst ensuring a rigorous core of essential knowledge and skills.

**Question 4: Should there be only one standard per Apprentice occupation/job role?**

Yes

No

Don't know

**Please explain your response:**



The standard for professional registration set and maintained by the Science Council should be adopted to provide an overarching standard for science. This provides consistency across the sector, drawing on the independence of the professional bodies to ensure that the standard is valued by employers and individuals alike. Those providing and developing apprenticeships should be required to work with the appropriate professional body to interpret the standard as appropriate for occupations. Through professional body approval the apprenticeship schemes can be shown to meet the overarching standard, provide transferability and progression opportunities.

The professional engineering institutions already approve or accredit apprenticeship schemes and the Royal Society of Chemistry has successfully worked with LGC to map their apprenticeship to the standard for Registered Science Technician. This is a new area of activity for the Science Council's licensed bodies: and it is keen to work with the relevant stakeholders to ensure that the systems developed are sustainable and will achieve an increase in the number of individuals pursuing science apprenticeships that also achieve professional registration.

As yet it is unclear how occupations will be defined for the purpose of skills planning and the design of apprenticeships. "Science technician" is not an occupation in itself and can be used to describe a wide range of roles including calibration technician, food composition technician, clean room technician, optometry technician and textile product testing technician. For science there may be analogous roles in different sectors: a clean room technician could be applying the same knowledge and skills working at a hospital, food manufacturing plant or satellite manufacturer. With their cross-sector viewpoint the science professional bodies are well placed to assist in identifying and defining the occupations appropriate for apprenticeship pathways. The Science Council is currently undertaking a second phase of its UK Workforce Research which has the capacity to explore these issues in greater depth and it would welcome an opportunity to work with the Review team should it be considered helpful.

5. The Richard Review recommends that there should be just one Apprenticeship standard and qualification for each occupation or job role. And that these should set out what an Apprentice should be able to do and know at the end of their Apprenticeship, in a way that is relevant and meaningful for employers.

The government recognises the arguments set out in the Review that having just one qualification per standard could maximise recognition, consistency and transferability, and make it easier to assure that quality is maintained. However ending the market in qualifications would be a significant step, and there are other options – for example agreeing a single standard but retaining a market in qualifications to test against it.

**Question 5: Should there be only one qualification per standard?**

Yes

No

Don't know

**Please explain your response:**

The Science Council recommends that undertaking an apprenticeship should provide the training and experience to prepare an individual for professional registration which is assessed through a peer review process delivered by the appropriate professional body. Individual qualifications can be accredited or approved as appropriate pathways towards meeting the standards.

This approach provides flexibility to meet the needs of the range of occupations embraced by the overarching standard, and encourages tailored and innovative training solutions whilst providing a simple system to aid the understanding of employers. As a form of 'kitemarking' it supports quality

control and aspiration, encouraging individuals to aim for registration and active participation in the furthering of their profession.

6. Our proposals to replacing the current Apprenticeship Frameworks with new employer-designed standards and qualifications would be a significant reform, and will need careful planning and collaboration.

We would like views on how best to manage the transition from the current system of multiple frameworks and qualifications to the more streamlined system of standards and qualifications which are recognised and valued by learners, employers and educational institutions.

For example - in the short term there may be merit in reviewing existing frameworks and / or the qualifications contained within these to remove those that employers do not value or which are furthest away from the new expectations for Apprenticeships

**Question 6: How should we manage the transition from the current system of Apprenticeship frameworks to a new system of employer-designed Apprenticeship standards and qualifications?**

The new system for apprenticeships should provide clarity on the ownership of standards, transparency and accountability of organisations involved in the system and clarity on the routes for employer involvement.

The Science Council's new registers, Registered Science Technician and Registered Scientist, are recognition that there is a need for standards at these levels to support expansion of the technician and graduate workforce in science. However, this is a new initiative and the professional bodies are working speedily to expand their resources to support the development and rollout of the registers. Government promotion of professional body approval for apprenticeships and encouragement for employers to engage will assist all stakeholders towards meeting the objectives to meet skills gaps and shortages. Professional body approval of training provision will help employers identify quality and lead to the market deciding which apprenticeships survive.

7. Once the new Apprenticeship standards are agreed it will be important that they remain rigorous, stretching and relevant to employers.

**Question 7: How can we make sure that the new standards stay relevant to employers, and are not compromised over time?**

The Science Council also has a broad base for stakeholder engagement. Its professional registers were established following extensive consultation with employers, professional bodies, Sector Skills Councils, training providers, Higher Education Institutions and Further Education colleges. In addition, through working with partners in the Technician Council, the Science Council has ensured that its professional standards for science technicians map to those for registration in other technical professions, such as engineering.

It is important that the relevance of the standards is maintained, evolving to meet changes in science knowledge and applications. The Science Council reviews standards every five years with input from the same stakeholder groups involved in the standards development. The Registered Scientist and Registered Science Technician standards were set in May 2011 and the standards for Chartered Scientist are due to be reviewed later this year.

8. Whilst some employers already contribute to the design and development of assessment, we agree with the Review on the benefits of employers playing an increased role in this area. This relates both to the design of the final test for the occupation or major job role and to the ongoing arrangements for assessing the competence of apprentices who take this, working with awarding organisations. Increased employer involvement will help to build trust in the credibility and rigour of the assessment process. In pursuing this, we will need to ensure that we do not ask more from employers than they have the capacity to do, which will vary between sectors and occupations.

**Question 8: How can we ensure that employers are better engaged with the development and oversight of the assessment in Apprenticeships?**

The assessment for apprenticeships should be linked to the overarching standard of registration and, through engagement with the individual professional bodies, employers should be involved in setting the criteria against which apprentices are assessed. Professional bodies should approve or accredit training providers to undertake the final assessment once the employer has deemed that an apprentice is ready. The final recognition of reaching the appropriate professional standard should be the ability to register with an appropriate professional body: this assessment is through a peer review process and also includes a commitment to continual maintenance of professional competence and to a code of conduct.

The independence of professional bodies enables them to gather feedback from assessors and employers and to adjust the system accordingly, sharing best practice and informing the continuous process of the review of standards of professional practice.

9. The Review proposes that employers also have a more direct role in being part of the final assessment of individual Apprenticeships. We are keen to explore how this might be achieved in practice, without placing undue burden on employers and recognising the expertise required of professional assessors. The role of such professionals will continue to be important.

We propose therefore to include assessment as a further area to be considered by those developing Apprenticeship standards. Employers would be invited to set out what an effective test of competency against the standards they wish to set would be, and how the arrangements for its delivery might work.

**Question 9: How could employers best be involved in the practical delivery of assessment?**

Employers will have their own mechanisms for identifying when an apprentice has reached the appropriate level of competence and is ready for final assessment. However, many employers will find it difficult to accommodate workplace assessment and to maintain the impartiality and consistency of standards there is benefit in independent delivery of assessment.

10. The key principles of assessment in any education or training system are independence, consistency and the maintenance of standards over time. Independent assessment should be demonstrably objective, separated from any individual or organisation with an incentive for whether the individual passes or fails. This might be achieved, for example, by ensuring that assessment is fully independent of training delivery. Or, where this is not possible, through robust arrangements for independent verification to ensure objectivity is maintained. By consistency we mean that the outcome of the assessment should not vary between different settings, workplaces or areas.

**Question 10: How can the independence and consistency of assessment in Apprenticeships be further improved?**

As described previously, linking the apprenticeships to professional registration and the involvement of professional bodies would improve consistency and independence.

11. Apprenticeships today, as a result of the qualifications they contain, often focus heavily on continuous assessment. This can be at the expense of new teaching and learning. Indeed, some Apprentices tell us that their Apprenticeship experience has been dominated by assessment alone. Re-focusing on assessment at the end will allow trainers to spend more time teaching, not testing.

**Question 11: How should we implement end point assessment for Apprenticeships?**

While the Science Council supports the recommendation that an apprenticeship is assessed for the holistic competence for an occupation, there is value in providing stopping off points that allow individuals to gain credits at key stages in their training – such flexibility would aid diversity and is a common feature of well-established work/training pathways such as those in accountancy. When used appropriately formative assessment can also support learning and there is some value in assessment informing apprentices of their progress.

Currently, many qualifications that individuals gain within an apprenticeship framework provide opportunities for progression to higher education institutions. Any new form of final assessment would need to ensure similar progression pathways. It should be noted that the professional qualification review process would not be appropriate as an entry assessment for higher education.

The Science Council believes that the system of professional registration is robust and well suited to provided assurance of occupational competence; we would need to be persuaded of the value of developing a new endpoint assessment for apprentices beyond that already provided by the qualifications within an apprenticeship and registration.

**Question 12: How should we implement grading for Apprenticeship qualifications?**

Registration is based on a threshold standard and the Science Council believes that apprenticeships should be structured similarly. It would not be appropriate to introduce grading which is not used in professional qualifications (including, it should be noted, medical degrees). However, it would be possible for assessors to identify outstanding individuals for commendation or prize awards. Employers will also naturally reward individuals that they identify as adding value to their organisations, as with other employees.

13. From August 2014, we will require all Apprentices who begin their Apprenticeship with only level 1 qualifications in English and/or maths to work towards level 2 attainment in these subjects during their Apprenticeship. At this interim stage Apprentices will not need to have achieved level 2 English and maths in order to successfully complete their Apprenticeship.

In future years our ambition is to go further, so that all Apprentices (including those starting without a level 1 in English or maths) must achieve level 2 English and maths as part of their Apprenticeship.

**Question 13: What are the specific obstacles to all Apprentices achieving level 2 English and maths as part of their Apprenticeship, and how could these be overcome?**

For science related Advanced and Higher Apprenticeships there is an entry level expectation that apprentices will have achieved level 2 English and maths.

**Question 14: How would a requirement to have all Apprentices achieve level 2 in English and maths impact on employers, providers and potential learners? What are the risks and potential solutions?**

See answer to Q 13.

15. Our proposed reforms, focusing on final competency and removing the detailed prescription and incremental assessment that many Apprenticeships involve today, will give greater scope to train in more flexible ways. We want more empowered employers, working with training providers and learners, to shape each individual Apprenticeship. Our reforms will incentivise greater responsiveness, innovation and dynamism in training delivery, with more new entrants to the market bringing fresh ideas and approaches. We want to encourage this, and also spread good practices and take full advantage of the opportunities offered by new technologies.

**Question 15: What further steps, by government or others, could encourage greater diversity and innovation in training delivery to help Apprentices reach the standards that employers have set?**

The Government should consider supporting FE colleges, training providers and employers to collaborate more closely. Moving to overarching standards will help to free up the paths to reach this end point.

16. We recognise the benefits for Apprentices of having sufficient time to learn and reflect well away from their “day job”, and share Doug Richard’s concerns that many Apprentices today lack sufficient time away from their workplace and off-site. This brings the opportunity for additional training, and gives the time and space to gain fresh perspectives and consolidate learning. Further benefits can come from shared learning with other Apprentices. We want to ensure this is a core component of every Apprenticeship, without undermining employers’ ability to shape each Apprenticeship as they see fit.

**Question 16: What approach would work best to ensure Apprentices benefit from time to train and reflect away from their day to day workplace?**

Professional body membership is one avenue to networking with others working in the same field and provides both opportunity and incentive for discussion and reflection. It will also provide a structure for continuing professional development after the completion of the apprenticeship.

**Question 17: Should off-site learning be made mandatory?**

Yes

No

Don’t know

**Please explain your response:**

Off-site learning can be beneficial but should be considered on a case by case basis taking account of what is most appropriate for the apprenticeship and individual employers: it should not be mandatory.

18. Employers need to be able to trust in basic safeguards for the legitimacy, quality and capacity of training providers they may wish to deal with. The Skills Funding Agency checks the financial credentials, capacity and any Ofsted inspection record of training providers receiving public funding. We will build on these arrangements to ensure that, as far as possible, they are an effective assurance of training quality as well as financial health, and that this information is accessible to employers to support their choice of provider. In doing so, we must ensure a process that facilitates new providers entering the market. We are also developing a “chartered status” concept, to give employers a visible symbol for high quality and responsive training organisations.

**Question 18: How can the process for approving training providers be improved, to help employers find high quality, relevant training?**

It is important to maintain the consistency of quality across apprenticeships from all sectors to protect the status of apprenticeships.

As outlined in previous sections, many professional bodies in the engineering sector already approve apprenticeship frameworks indicating that they meet independently set standards. The Engineering Council oversees a publically available qualifications database that employers can access with ease. The Science Council believes that independent involvement of professional bodies is of value to employers and would support the growth of science apprenticeships. It should be noted that apprenticeships in science are not as well established as they are for engineering and the sector generally, including professional bodies, are at an earlier stage in developing systems.

19. We agree that voluntary, employer led kitemarking could play a role in helping employers find the right occupation-specific training. We believe it is for industry and professional bodies in each sector to judge this, and to develop and implement any schemes they believe appropriate. The aim would be to guide employers towards those providers with a strong record and offering good service in their particular area. A number of models are possible, and it may often be that the best approach will differ between sectors. However, if there is strong support for kitemarking in a number of sectors, there may be a case for an overarching framework and branding to reduce the scope for confusion and burdens on providers.

**Question 19: Do you believe that a kitemarking scheme for your sector or profession would add value and be supported?**

Yes

No

Don't know

**Please explain your response:**

Confidence in qualifications and apprenticeships from both employers and potential apprentices is paramount. The Science Council considers that to deliver confidence quality assurance for apprenticeships should be provided by the guardians of the relevant standard. With regard to the potential apprentices, research consistently indicates the importance of family attitudes on career choice and it is therefore very important that quality assurance systems serve to build wider public confidence in the brand of apprenticeships. It should also be noted that many employers, particularly global innovation led companies, will be working across sectors and would be better served by a system of quality assurance that is similar for all apprenticeships: professional body approval could be the basis of such a framework and would have the advantage of being widely tested in higher education.

20. The government has a particular responsibility to make the data it collects easily available for others to make good use of. This is an area in which we recognise we can do better, and we agree the emphasis that Doug Richard has placed on this.

The government's Digital Strategy signals our intent to do more to harness the creativity and innovation of the private sector, to enable the development of tools and services that maximise the value of data collected by Government.

**Question 20: What more can government do to facilitate effective third party/external use of its data to better inform individuals and employers about Apprenticeships?**

**Question 21: What approaches are effective to inform young people and their parents about the opportunities provided by an Apprenticeship?**

A wide range of factors influence the choices of young people: it is therefore difficult to monitor the impact of activity to evaluate the relative effectiveness of approaches. However, research shows that the medium through which information is presented to young people across different social groups plays a significant role in shaping attitudes towards pursuing a career in science.<sup>6 7</sup>

“Cold’ knowledge (e.g. through documents, prospectuses, and new technologies like websites) does not sufficiently change patterns of educational choice, particularly for ‘working-class learners’, who tend to rely more on ‘hot’ knowledge, such as interpersonal relationships, particularly from known or trusted sources. For this group of learners especially, it is important to recognise the benefits that face-to-face guidance offers them in mapping out their education options and career choices.”<sup>8</sup>

It is clear that the medium through which information is presented is important and while we know that awareness and education can support young people to access information this alone is insufficient to guide young people to appropriate choices - advice and guidance are required, particularly for those lacking in social capital.

22. There is some excellent practice in forging meaningful connections between industry and education, but we accept that this is by no means universal and varies by both place and sector. We are committed to improving employer links with schools, colleges and other training providers. Current activity includes work by the National Careers Service, National Apprenticeships Service and local employer partnerships, as well initiatives led by third sector organisations.

**Question 22: How can we support employers to engage with learners of all ages to provide information about Apprenticeship opportunities?**

23. It is important that we assess the impacts, both direct and indirect, of the reforms set out in the government’s response to the Richard Review of Apprenticeships. Initial screening suggests that of the groups with protected characteristics some of the changes proposed could directly or indirectly impact in terms of gender, ethnicity, age and disability. We would welcome views on this issue from all respondents and particularly organisations representing these groups and others that may be affected.

---

<sup>6</sup> Greenbank and Hepworth, “*Working class students and the career decision making-process*”, Edge Hill University, 2008.

<sup>7</sup> Wellcome Trust Monitor, 2012

<sup>8</sup> Archer et al, “*Doing science versus being a scientist*”, p.6.



**Question 23: Do you consider that the proposals set out in this document would have a positive or negative impact on any group, including those with protected characteristics? Please provide any comments or evidence you have for your answer and set out which aspects of the reforms will impact and how these impacts might be managed.**

**Question 24: Do you have any further comments on the issues in this consultation?**

We acknowledge that the solutions proposed for science may not easily translate to other sectors with different stakeholder environments: however, the opportunity for significant improvements in science should not be missed.

**Thank you for taking the time to let us have your views on this consultation. We do not acknowledge receipt of individual responses unless you tick the box below.**

**Please acknowledge this reply**

**Member Bodies of the Science Council  
May 2013**



1. Association for Clinical Biochemistry\*
2. Association of Neurophysiological Scientists\*
3. Association for Science Education\*\*/ \*\*\*
4. British Academy of Audiology
5. British Association of Sport and Exercise Sciences \*
6. BCS, The Chartered Institute for IT\*
7. British Psychological Society\*
8. British Society of Soil Scientists\*
9. Chartered Institution of Water and Environmental Management\*
10. College of Podiatry
11. Energy Institute\*
12. Geological Society of London\*
13. Institute of Biomedical Science\*/ \*\*
14. Institute of Brewing and Distilling\*
15. Institute of Clinical Research\*
16. Institute of Corrosion\*
17. Institute of Food Science and Technology\*/ \*\*
18. Institute of Marine Engineering, Science and Technology\*
19. Institute of Materials, Minerals and Mining\*
20. Institute of Mathematics and its Applications\*
21. Institute of Measurement and Control
22. Institute of Physics and Engineering in Medicine\*/ \*\*
23. Institute of Physics
24. Institute of Science and Technology\*\*
25. Institute of Water (IWater)\*
26. Institution of Chemical Engineers\*/ \*\*
27. Institution of Environmental Sciences\*
28. London Mathematical Society
29. Mineralogical Society\*
30. Nuclear Institute\*
31. Oil and Colour Chemists' Association
32. Physiological Society
33. Royal Astronomical Society
34. Royal Meteorological Society
35. Royal Society of Chemistry\*/ \*\*
36. Royal Statistical Society\*
37. Society for Cardiological Science and Technology
38. Society for General Microbiology
39. Society of Biology\*/ \*\*
40. Society of Dyers and Colourists

\* Licensed to award Chartered Scientist (CSci)

\*\* Licensed to award Registered Scientist (RSci) and Registered Science Technician (RSciTech)

\*\*\*Licensed to award Chartered Science Teacher (CSciTeach)

© Crown copyright 2013

You may re-use this information (not including logos) free of charge in any format or medium, under the terms of the Open Government Licence. Visit [www.nationalarchives.gov.uk/doc/open-government-licence](http://www.nationalarchives.gov.uk/doc/open-government-licence), write to the Information Policy Team, The National Archives, Kew, London TW9 4DU, or email: [psi@nationalarchives.gsi.gov.uk](mailto:psi@nationalarchives.gsi.gov.uk).

This publication is also available at <https://www.gov.uk/government/consultations/>

Any enquiries regarding this publication should be sent to:

Department for Business, Innovation and Skills  
1 Victoria Street  
London SW1H 0ET  
Tel: 020 7215 5000

If you require this publication in an alternative format, email [enquiries@bis.gsi.gov.uk](mailto:enquiries@bis.gsi.gov.uk), or call 020 7215 5000.

**BIS/13/RF**