

AN INTRODUCTION
TO TECHNICIAN
REGISTRATION



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A GATSBY PAPER OUTLINING HOW TECHNICIAN REGISTRATION WORKS AND HOW REGISTRATION STANDARDS COULD BE USED TO ASSURE THE QUALITY OF APPRENTICESHIPS

THE PROBLEM

An expanded technician class is vital for the future prosperity of the UK. Yet employer surveys and analyses of the labour market report an acute shortage of technicians in the UK economy. By 2020 it is predicted we will need an additional 450,000 technicians to meet the needs of employers in the high-growth science, engineering and technology-related (SET) sectors alone. However there are a number of barriers to achieving this expansion:

- the contributions that technicians make to the economy, and to our lives more broadly, are not sufficiently recognised and, as a consequence, these occupations (and their related training pathways) do not enjoy the status they deserve;
- this lack of status has significant implications in terms of the desirability of these occupations to young people. As the 2011 Wolf Report suggested, too much attention has been given to linking aspiration to the collection of qualifications rather than linking aspiration more broadly to learning and success at work;
- progression for technicians is uncertain, both in terms of progression to the professions and also in terms of having their skills recognised by other sectors that they might wish to work in.

These issues are exacerbated by the complexity of the qualifications landscape, which makes it difficult for employers to assess the knowledge and skills of potential recruits. Professional registration can play a major role in overcoming all of these barriers.

WHAT IS REGISTRATION?

Professional registration involves a licensed agency registering the names and other relevant details of individuals in a particular occupation. To register, an individual needs to prove their competence to perform work to the necessary standards, by providing evidence that they have certain skills and knowledge. The individual must also demonstrate commitment to maintain competence and work within professional codes.

In the SET sectors, the common registration framework being developed will provide a vocational ladder to the professions, comprising three 'rungs' of professional standards, beginning at Level 3, with 'Registered Technician' and concluding with 'Chartered' status. Professional bodies set the benchmarks for these standards and map qualifications against them. Registered technicians are permitted to use Privy Council-approved post-nominal letters (EngTech, RSciTech, etc). The table on the following page shows the registration 'ladder' in engineering and science:

QCF Level	Professional titles in engineering (and post-nominals)	Professional titles in science (and post-nominals)	Typical qualifications possessed
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 Bachelor's Degree
7+	Chartered Engineer (CEng)	Chartered (CSci, CPhys, CChem, etc)	Master's Degree

An application to become registered is made through a professional body (learned societies such as the Royal Society of Chemistry, Institution of Mechanical Engineers, Institution of Civil Engineers, etc).¹

To become registered, a technician must demonstrate professional competence, which integrates knowledge, skills and professional values. The competence statements for registered engineering technician (EngTech) are given in Appendix A.

The knowledge and skills enshrined within the registration standards reflect the demands of the occupation, but are broader than those that would be assessed through NVQs or other occupational qualifications. This breadth is vital to ensuring that technicians – in addition to possessing the skills specific employers seek – possess the transferable skills that will enable them to respond to changes within the dynamic industries in which they will work throughout their career.

Registration standards in engineering are owned and managed by the Engineering Council; in science they are the responsibility of the Science Council. These two Councils license the professional bodies in their sector to award professional status to individuals. In this way, applicants are assessed against the standards within the context of their particular occupation. So, while of course the precise knowledge and skills between registered technicians vary (according to the requirements of their occupation and sector), a common standard is assured across all SET disciplines.

Although it is possible to demonstrate professional competence entirely through workplace performance, the majority of registrants use qualifications to demonstrate that they have the requisite formal education. In order to facilitate this process, professional bodies often accredit or approve qualifications (just in the same way as, for example, the Institute of Physics accredits physics degrees so that graduates of accredited degrees have fulfilled the educational requirements for Chartered Physicist status).

THE PROCESS OF REGISTRATION

Technicians seeking registration are required to demonstrate they have the knowledge, skill and professional commitment to meet the five sets of competence standards (see Appendix A).

¹ Membership of a professional body is an important element in the registration process. It opens up opportunities for progression, professional development and networking. The professional bodies that set the registration standards also have considerable status, both within their fields (in the UK and abroad) and amongst the wider public.

How this is achieved depends on the individual's qualifications and training. A technician in the existing workforce with no formal qualifications or recent training would need to provide evidence that they met all the competence standards (for example through a portfolio of work, references from their manager, and/or a professional review interview with a member of the professional body).

A relevant qualification (eg a Level 3 BTEC in Engineering) can meet some aspects of the knowledge-based competences but evidence will be required to demonstrate the application of this knowledge in the workplace as well as evidence of their commitment to professional practice.

However, the professional bodies formally approve a large number of advanced apprenticeships as meeting most (and, in a small number of cases, all) of the required competences. Where a technician has completed one of these approved apprenticeships, registration is significantly simplified. There is some variability between professional bodies regarding what is required, and this reflects the variety of occupations covered by the registration framework. Once an approved apprenticeship has been completed in some occupations (eg electrical technician), completion of an application form is all that is required; for others (eg in civil engineering), a professional review interview is deemed necessary. Work is currently underway to standardise the approach – as far as possible – across professional bodies. Whichever approach is adopted, there is an administration cost for the process; currently this is about £100 per registrant.

THE BENEFITS OF REGISTRATION

Registration sets clear expectations about what is required of a technician. It thus allows qualifications to be developed with clear aims for the knowledge and skills that need to be assessed. As described above, apprenticeships and other training routes can be aligned to registration standards, creating credible technician pathways.

More broadly, registration removes the need for employers to understand the detail of the complex vocational qualifications system; they are able to appoint registered technicians, confident their recruits have the requisite knowledge, competence and skills. Registration can also be valuable to employers in other ways. As well as demonstrating a commitment to the training and development of staff, registration allows organisations to demonstrate their staff's competence and commitment to continuing professional development and ethical and professional behaviour, which could be an important feature in procurement and liability issues.

Furthermore, registration through professional bodies brings status – much more than any government could ever hope to confer on an individual qualification. It also becomes an important way to ensure qualifications are giving individuals the skills they need in industry. Registration schemes are financially viable for professional bodies only if they are attractive to individuals who pay registration fees. This will be the case only if registration brings the individual a significant advantage in the labour market and if registration standards reflect the needs of employers. Professional bodies are thus incentivised to ensure standards – and the qualifications mapped against them – are relevant to the needs of industry and responsive to any changes wrought by future technological innovation or shifts in the economy.

By mapping qualifications to the registration standards, professional bodies will be able to exert positive influence on the length, content and assessment of qualifications. The unrivalled status of professional bodies in SET means they have significant convening power. They can ensure qualifications are both academically rigorous and meet the demands of employers and thus have genuine value in the labour market, giving better employability opportunities and wages to those who achieve them.

Establishing a common framework of registration for technicians working across the SET sectors (and potentially beyond) presents an opportunity to establish common quality standards for UK technicians and ensure the skills and knowledge learnt within technician pathways develop in line with employers' needs. Over time the registers will raise the status and profile of technicians and this, in turn, should drive improvements in technician training and support increased recruitment. Therefore this initiative has the potential to make a key contribution to solving what for many years has been a major problem for British industry. (For a fuller list of the benefits of registration see Appendix B.)

PLACING PROFESSIONAL STANDARDS AT THE CENTRE OF THE APPRENTICESHIP SYSTEM

The Richard Review's vision for apprenticeships offers the opportunity to place professional bodies and the standards they hold at the heart of the apprenticeship system.

Doug Richard proposes that a new apprenticeship qualification should be developed for each category of occupation, and that recognised industry standards should form the basis of each of the new qualifications. Richard goes on to stress that wherever possible the new qualifications should "lead to professional registration, which for some sectors and professions have been ensuring quality outcomes for many years".

The science and engineering communities overwhelmingly support this proposal, and believe that all apprenticeships (including Higher Apprenticeships) should be aligned to the relevant professional registers where they exist (including in sectors beyond SET, for example in accountancy, law and healthcare). These registers are recognised by employers, have value in the labour market and provide those who achieve them with enhanced employment opportunities.

As mentioned above, it is already the case that a number of current engineering apprenticeships are approved by professional bodies as meeting most of their professional standards. In a small number of cases – where the professional body has been involved in designing the apprenticeship – all the standards are met through successful completion of the apprenticeship.

However, an expansion of this practice (where professional registration is near-automatic) is currently limited because professional bodies have to see evidence from *each* employer that an approved apprenticeship framework is being provided in a way that meets the professional standards. There is too much room for variability within an apprenticeship framework for professional bodies to be assured that all completing apprentices meet a certain standard of occupational competence, and can be registered automatically.

This issue of variability within apprenticeships was also identified by Richard. He noted that the way apprenticeship frameworks are designed and assessed does not guarantee that each apprentice will be competent in an occupation by the end of their training. For this reason, he recommended that new apprenticeship qualifications should be developed to meet both the needs of employers *and* professional standards, with a test (or professional review) at the end verifying competence.

By placing professional bodies at the heart of the apprenticeship system in this way, it would become the norm for all apprentices to become registered with their professional body when they complete their training, thus rapidly driving up (and independently assuring) apprenticeship quality across the board and bringing international currency to our apprenticeship system. In addition, the prestige and status of completing a high-quality apprenticeship would be significantly enhanced by professional registration, which comes with Privy Council-approved post-nominals. Someone completing an approved engineering apprenticeship would be designated 'J.Bloggs, EngTech' much in the same way as someone completing an engineering degree would be 'J.Bloggs BEng'.

Sector Skills Councils (SSCs), or whatever the relevant employer body may be, would still have an important role to play in the process. SSCs are able to articulate the skills required by employers in their sector, and this is vital in ensuring registration standards meet the needs of, and are valued by, employers of all sizes. However, the professional bodies' involvement in the process would ensure that apprentices also acquire the broad, generic and transferable skills that are essential to technician roles and a requirement of the professional standards.

APPENDIX A: ENGINEERING COMPETENCE STATEMENTS TAKEN FROM UKSPEC

Registered Engineering Technicians (EngTechs) must be competent by virtue of their education, training and experience, to:

A) Use engineering knowledge & understanding to apply technical and practical skills.

This includes the ability to:

A1 review and select appropriate techniques, procedures and methods to undertake tasks;

A2 use appropriate scientific, technical or engineering principles.

B) Contribute to the design, development, manufacture, construction, commissioning, operation or maintenance of products, equipment, processes, systems or services.

In this context, this includes the ability to:

B1 identify problems and apply diagnostic methods to identify causes and achieve satisfactory solutions;

B2 identify, organise and use resources effectively to complete tasks, with consideration for cost, quality, safety and environmental impact.

C) Accept and exercise personal responsibility.

This may include the ability to:

C1 work reliably and effectively without close supervision, to the appropriate codes of practice;

C2 accept responsibility for the work of self and others;

C3 accept, allocate and supervise technical and other tasks.

D) Use effective communication and interpersonal skills.

This includes the ability to:

D1 use oral, written and electronic methods for the communication in English of technical and other information;

D2 work effectively with colleagues, clients, suppliers and the public.

E) Make a personal commitment to an appropriate code of professional conduct, recognising obligations to society, the profession and the environment.

In order to satisfy this commitment, they must:

E1 comply with the Code of Conduct of their Licensed Institution or Professional Affiliate;

E2 manage and apply safe systems of work;

E3 undertake engineering work in a way that contributes to sustainable development;

E4 carry out continuing professional development, including opportunities for this offered by their Institution, to ensure competence in areas and at the level of future intended practice.

APPENDIX B: BENEFITS OF TECHNICIAN REGISTRATION

To employers

Assists recruitment process

- Employers can be assured that potential new recruits who are registered meet an independently verified level of competence.

Winning new business

- Registration is recognised by customers in the UK and abroad, and is a good way to provide evidence of workforce expertise when bidding for new contracts.

Staff development

- Professional bodies offer structured up-to-date professional development programmes for registered technicians, which can be run alongside employers' own internal training schemes.
- Employing registered technicians, and supporting employees to become registered, demonstrate an employer's commitment to the development of its workforce.

Mitigation in the event of an accident/legal investigation

- In the event of a serious incident, employers with registered employees have independently assured evidence that their staff are suitably qualified and experienced. This may also help to reduce insurance rates.

To technicians

Improved employment prospects

- Registration has value in the labour market. It assures employers that a technician has the degree of competence and experience that is expected of them by their profession.
- Registration provides a clear route into and through the professions. Should an individual wish to progress their career, technician registration is the first rung on the ladder towards Chartered status.
- Technician registration is also recognised by employers in other countries, and enables individuals to transfer into technician roles across a range of sectors.

Status and recognition

- Registered employees command respect within the organisations in which they work, while customers and the general public have a higher level of confidence in technicians who are professionally registered.
- Registered technicians are entitled to use Privy Council-approved post-nominals (eg EngTech).

Career development

- As a member of a professional body, registered technicians have access to professional development resources and job finder services, and get the opportunity to meet and develop contacts with other members of their profession.

To training providers

Demonstrates and assures high quality training

- Professional bodies can approve providers whose training programmes lead to technician registration. This independent verification attracts able, motivated students, and helps to create closer links between providers and employers.

To the economy

Prevents future skills shortages and skills gaps

- Strong technician registers will raise awareness and increase the status of technician occupations. This will encourage more young people to pursue careers in technician roles, thereby helping to prevent future skills shortages in high-growth industries.
- Registration has a strong focus on transferable skills and professional development, helping registered technicians to adapt easily to technological developments in the workplace. This helps to prevent skills gaps from occurring, which can affect businesses' productivity and the competitiveness of the UK economy.

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