Repositioning BCS Degree Accreditation

Tom Crick[1], James H. Davenport[2], Paul Hanna[3], Alastair Irons[4], Sally Pearce[5] and Tom Prickett[6]

[1]Swansea University (thomas.crick@swansea.ac.uk)
[2]University of Bath (j.h.davenport@bath.ac.uk)
[3]Ulster University (p.hanna@ulster.ac.uk)
[4]Sunderland University (alastair.irons@sunderland.ac.uk)
[5]BCS, The Chartered Institute for IT (sally.pearce@bcs.uk)
[6]Northumbria University (tom.prickett@northumbria.ac.uk)

Professional body accreditation must better communicate its value to higher education institutions, industry and society as a whole. We explore the value of, and future enhancements to, BCS Accreditation.

Background

Criticism of the accreditation of degree programmes by professional bodies is not new. There is a long history of concerns – from the processes being perceived as unnecessarily bureaucratic, perhaps constraining innovation, or potentially replicating existing academic quality assurance processes. Furthermore, there is the challenge of acknowledging the cost of accreditation, but not being viewed as a lucrative income stream; rather as a "public good", for the benefit of the discipline and wider society. This is of particular relevance in the context of promoting and recognising skills for a diverse – and global – digital economy.

The Shadbolt Review [1] was an independent review of computer science degree accreditation and graduate employability commissioned by the UK Government and published in 2016. It looked at the purpose and role of degree accreditation, with a strong focus on recognising the emerging skills requirements of employers, and how it can be used to enhance graduate employability. One of the key challenges identified in the Shadbolt Review was how to increase awareness of the value of professional body accreditation. Further to our recent work in this space [2], we outline the value of BCS degree accreditation.

How does BCS accreditation work?

In total, the BCS visits around 110 higher education institutions (HEIs) who are affiliated to the Institute, overwhelmingly based in the UK, but with increasing international interest (currently five accredited HEIs overseas). Accreditation is voluntary and programme-specific, as part of a quinquennial institutional process. This includes a formal visit to the HEIs, conducted by a panel of 3-4 academics and an industry representative. All of the panel are Chartered Professional Members of the BCS, with current academic or industry experience in line with the programmes being offered for accreditation. The costs associated with accreditation are covered by HEI subscriptions to be BCS Higher Education Affiliates. The panel has two key objectives:

i) *Are the exit standards of the programme appropriate for the level of accreditation sought?* A number of measures are considered including entry, progression, retention, awards and graduate employability. This is supplemented by wider evidence of the quality of the provision, providing assurance that standards will be maintained by the institution; for example, through external examiner reports, the most recent programme review, annual

review information, evidence of employer involvement, research-informed teaching, quality of final-year projects, etc. Together this evidences that a programme is of an appropriate standard to award accreditation.

ii) *Are the curricula exit standards of a programme consistent with the learning outcomes expected for the accreditation sought?* The expected exit standards should address the BCS accreditation criteria, which conform to the relevant international memoranda (Washington or Seoul Accord, or both); these memoranda provide international recognition and portability, as well as longer-term registration for CEng, CITP or both.

The value of accreditation

The value of accreditation is linked to the value of an accredited degree -- and like any form of accreditation or endorsement, it provides a recognised kite-mark. Students and employers can use it as a benchmark standard of a particular degree; HEIs can use accreditation to assist with marketing their programmes. Additionally, accredited degrees offer a simplified pathway to membership and future professional registration with the BCS. Whilst a standards-based approach underpins the process, an enhancement-focused view is also taken. BCS is currently supporting a wider dialogue and co-construction process with stakeholders to explore the value-proposition of accreditation; the following are key dimensions of this process:

Raising output standards: BCS has refused accreditation for programmes that are not of an appropriate standard. However, an enhancement-oriented, continuous improvement approach is adopted, rather than a prescriptive, “tick-box” compliance process. In response to the Shadbolt Review, two new areas for consideration were introduced: "*% of graduates in related professional employment 6 months after graduating*" and, "*Describe how employability skills are developed within the students and how students are supported in their professional development*".

Promoting internationally-agreed standards: BCS aligns to recognised international standards, which evidence the parity of the degree programmes being accredited, assisting in the global mobility of graduates and the value of professional registration. BCS refuses accreditation when achievement of the relevant curricula exit standards for the accreditation sought are not met.

Ensuring curricula relevance: The most recent example of this is the inclusion of a requirement to incorporate teaching and assessment on cybersecurity in all accredited degrees [3], to reflect the importance of this topic across our discipline. BCS has required coverage to gain accreditation since 2015, with all accredited universities compliant by 2020. The 2019 Royal Institution Christmas Lectures by Dr Hannah Fry considered ethical questions related to computing and mathematics; this is a curriculum element that has been mandated by BCS accreditation in the form of legal, social, ethical and professional issues for many years [4]. Group working experience is also mandated by BCS for accredited programmes. These “work-ready” skills are highly-valued by employers, but typically disliked by students at the time. With national league tables a key measure for UK HEIs, which can be heavily-weighted by student satisfaction, it is possible that without accreditation many aspects of this provision would be minimised or removed.

Disseminating good practice: BCS accreditation panels have been identifying how best to disseminate aspects of good practice for a number of years. As part of the enhancement approach, panels will often suggest proven approaches to issues based on their own academic or industrial experience.

Industry relevance: All BCS accreditation panels include an industrial assessor whose role includes ensuring that programmes are aligned to the diverse needs of employers, ensuring that graduates are equipped to enter a competitive employment market.

Independent peer review: Peer review is a common aspect of quality assurance in higher education, especially in periodic review processes; in most cases, the HEI being reviewed appoints an independent external panel member. As part of a BCS accreditation process, the HEI does not select or directly appoint the panel, reinforcing the robustness of the process. BCS review panels contain a minimum of two experienced assessors who have significant experience of the discipline, especially across the UK sector.

Accrediting work experience: BCS has introduced accreditation to Professional Registration for IT Technicians (RITTech) as a mechanism for acknowledging the value of industrial experience gained during a placement, foundation degree or work experience as part of a degree apprenticeship.

Looking ahead

BCS is currently working on a project investigating how to enhance the value of professional registration to students, graduates and early-career professionals, which clearly links back to degree accreditation. We are also prioritising how to better disseminate good practice across the sector that's been identified during accreditation visits, to recognise innovative learning and teaching; a good example of this would be the case studies presented at the annual ACM Computing Education Practice Conference held in Durham[1]. Finally, the BCS is continuously reviewing the accreditation process to reduce any unnecessary administration and not duplicate existing quality assurance processes. For example, we examine data that HEIs are already required to collect for other purposes as much as possible, such as UniStats (the student information portal created by the Office for Students). More information related to ongoing accreditation enhancements can be seen in our recent work [2,3].

Join the conversation

We welcome comments and feedback from across the IT industry; please complete our accreditation survey: http://bit.ly/BCSHEaccredITNow

References

[1] N. Shadbolt (2016). *Shadbolt review of computer science degree accreditation and graduate employability*. https://www.gov.uk/government/publications/computer-science-degree-accreditation-and-graduate-employability-shadbolt-review

[2] T. Crick, J.H. Davenport, P. Hanna, A. Irons, and T. Prickett (2020). *UK Computer Science Degree Accreditation: A Post-Shadbolt Review Update*. In Proc. 4th Conf. on Computer Education Practice, ACM. https://doi.org/10.1145/3372356.3372362

[3] T. Crick, J.H. Davenport, A. Irons, and T. Prickett (2019). *A UK Case Study on Cybersecurity Education and Accreditation*. In Proc. Frontiers in Education Conf., IEEE. https://arxiv.org/abs/1906.09584

[4] P. Brooke, T. Prickett, S. Keogh, and D. Bowers (2018). *Becoming Professional: A University Perspective*. ITNow 60(2), 16–17. https://doi.org/10.1093/itnow/bwy037

[1] http://community.dur.ac.uk/cep.conference/2020/