



Assessing the Value of Professional Body Accreditation of Computer Science Degree Programmes: A UK Case Study

Tom Crick¹; Tom Prickett²; James H Davenport³, Alastair Irons⁴

¹Swansea University, ²Northumbria University, ³University of Bath, ⁴Sunderland University

Abstract

This poster presents a model for the value provided by professional body accreditation of computer science degree programmes in the United Kingdom (UK). We introduce how one large UK professional computing body -- BCS, The Chartered Institute for IT (BCS)-- addresses degree accreditation, as well as recent changes to content and process. Whilst comparable accreditation regimes exist in a number of other jurisdictions, we provide the opportunity for exploring future extensions to, and the portability of, the UK model.

Contact

Tom Crick
Swansea University
Email: thomas.crick@Swansea.ac.uk
Website: <https://proftomcrick.com/>

Tom Prickett
Northumbria University
Email: tom.prickett@northumbria.ac.uk

James H Davenport
University of Bath
Email: jhd@cs.bath.ac.uk

Alastair Irons
Sunderland University
Email: alastair.iron@sunderland.ac.uk

Your views?

We welcome your views either by email or by the survey at:

<https://bit.ly/ITICSEAccreditationSurvey>

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Many have contributed to the work to date, assessors, visited HEIs and BCS staff. Hopefully, the community will continue to engage with the enhancement of the regime which will be of further benefit to students, graduates, employers and HEIs.

Introduction

Accreditation will always be a work in progress in how to best support students, employers and Higher Education Providers. Accreditation of Computer Science degree programmes has been divertive since its inception. In this context "Computer Science" is meant to indicate a broad range of programmes such as Software Engineering, Computer Technologies, Information Technology, Computer Science or similar titles. The value of professional body degree accreditation regimes includes:

- kite-marking
- promoting the development of a globally-portable and recognised workforce [6].
- perceived to be unnecessarily bureaucratic [5]
- constraining innovation in learning and teaching [5]
- generating revenues streams rather than for the benefit of a discipline or wider society [6]
- colonial and paternalistic in nature [7].

This poster presents an evaluation of the current state of play of one accreditation regime, BCS, The Chartered Institute for IT, one such body based in the United Kingdom

Assessment Approach

The assessment of the accreditation regime took place in two parts. The first part of the assessment followed a deficit approach. This was followed by appreciative enquiry into the value provided by the accreditation regime.

A deficit analysis approach is embedded into the operation of the accreditation regime. Feedback is sought from visited Higher Education Institutes (HEIs) and from all BCS assessors following an accreditation visit. The steering committee for accreditation (the BCS Academic Accreditation Committee), meets twice yearly to consider enhancements to the process. Enhancements can be based upon feedback or from other sources within the sector. Some examples of the work completed are presented in the results section.

In terms of the appreciative enquiry approach, insights obtained from the views of HEIs through a range of formal and informal events organised by BCS; canvassed as part of 18 formal accreditation visits (from September 2018-September 2019); workshops run between November 2018 and November 2019 as part of the operation of BCS Academic Accreditation Committee (AAC); and survey-based feedback gained from BCS Academic Assessors, attendees of the 2020 ACM Computing Education Practice Conference in Durham, UK [4] and the readership of ITNow [3], the 'the voice of the BCS' which publishes articles on all aspects of computing and IT.

Deficit Analysis - Results

Table 1. Example Outcomes from deficit enquiry

Criticism	Source	Adjustment Made
Unnecessarily bureaucratic	Feedback from HEIs	Flexibility in format of submission Minimize bespoke documentation required Application 100% electronic Online briefings
Constraining innovation	Anecdotal	Identify and promote practice highlights [1, 4]
Revenue stream for BCS	Anecdotal	Membership fee for BCS Educational Affiliate remains low and covers costs of accreditation only
Graduate Employment	Shadbolt Review	Graduate employment statistics considered as an exit standard HEIs requested to indicate mechanisms to support employment as part of application
Colonial and paternalistic in nature	Anecdotal	Respect terms of engagement of Washington and Seoul Accord.

RESULTS

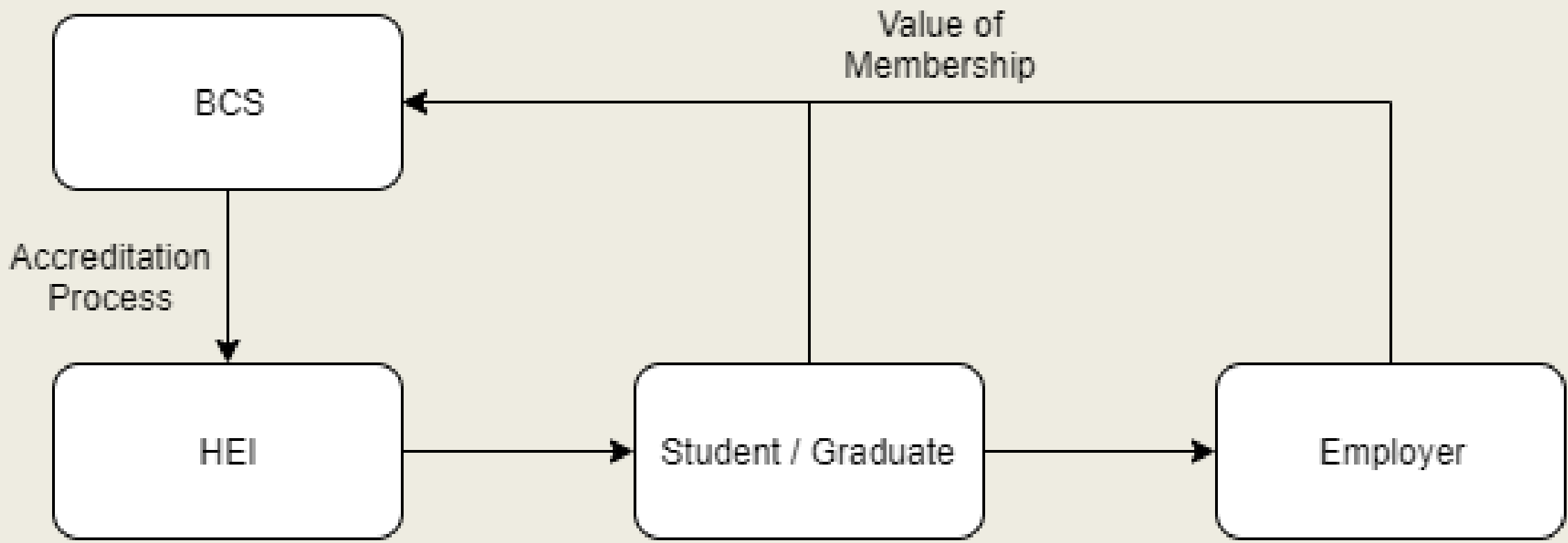


Figure 1 – who are the stakeholders in accreditation

Appreciative Enquiry – Results

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.

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, 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 [2]. Professional topics have been mandated by BCS accreditation in the form of legal, social, ethical and professional issues for many years. 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. In the UK context, 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 since 2010. 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.

Discussion

Clearly the value of a professional bodies' accreditation is in part linked to the value of membership. The BCS is currently investigating how the value of membership to students, graduates, early career professionals, employers and academics can be enhanced.

Whilst there have been initiatives to address issues identified, this work will continue and there is a commitment to seek to identify bureaucracy and where possible reduce the bespoke documentation required. As accreditation is made against international memoranda, there will remain a need to continue to map to the existing standards of accreditations sought.

Conclusions and Future Work

In recent years, adjustments to the BCS accreditation regime has resulted in:

- More flexibility and some reduction in effort for HEIs
- An enhanced mechanism for identifying and promoting innovation witnessed as part of the process
- An increased focus upon graduate employment as one of a number critical exist standards (for example retention and progression and hence value for money from a student's perspective)
- A statement of the current value of the accreditation regime.

As indicated in the introduction, accreditation will always be a work in progress in how to best support students, employers and HEIs, to this end BCS will shortly be running a design workshop, followed by consultations with the intention to provide an enhanced programme in 18-months' time.

One intention of the production of the poster was to share work completed to date, explore the portability of the work to other jurisdictions, with the view that further dialog and exchange could lead to the enhancement of this and other accreditation regimes.

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