

Evidence submitted to the DIUS Select Committee Enquire on ELQs

Summary

1. The Council of Professors and Heads of Computing (CPHC) is the Computing academic subject body and represents the Computing and IT Departments in UK Higher Education Institutions. Our undergraduate and postgraduate teaching makes a strategic contribution to the UK economy in three specific ways:

- (a) we deliver technically qualified Computing and IT graduates;
- (b) we provide opportunities for up-skilling IT professionals working in a sector characterised by a high rate of change;
- (c) we provide extensive opportunities for re-skilling graduates from other disciplines who take up IT jobs.

Many of our departments play a key role in R&D and innovation across the ICT¹ sectors, keeping the UK at the forefront of technology driven innovation [1].

2. CPHC believes that the ELQ policy will have a disproportionate impact on subjects with a high vocational relevance that are making a significant contribution to the Government's Life-long Learning and Widening Participation agendas.

3. The impact is particularly disproportionate for Computing and IT, a sector of strategic importance, at the heart of, *i.a.*, the global UK Trade and Investment Marketing Plan announced in November [1]. CPHC believes that the impact of ELQs on the IT sector, and on the UK's ability to close the IT skills gap across all areas of the UK economy, will undermine the UK's global competitive advantage.

4. Short term exemptions to the policy, and large scale reliance on employer support are inappropriate mechanism for delivering sustainable solutions to addressing the IT skills gap on the required scale.

5. The ELQ policy was introduced at short notice, without appropriate consultation either of HEI, or of employer sectors that rely heavily on professional and vocational subjects for recruitment, for re-skilling and for up-skilling.

¹ The boundaries and differences between ICT, Computing and IT are subtle. For this document, an agreement that ICT includes Computing and IT as inseparable enabling technologies will suffice.

Context: The IT skills gap

6. The UK's competitiveness rests on inventiveness and the ability to add value to business through IT [1, 2, 6]. The UK IT sector is a key global player, attracting significant inward investment [1, 2, 5], and an integral part of the ICT area, which is subject to a business and government led strategic marketing initiative announced by UK Trade & Investment Office in November 2007.

7. In the UK, e-skills estimates that 120,000 new IT related jobs are advertised each year. Technically qualified graduates with Computing and IT qualifications make up just 17% of the IT workforce [13]. This large mismatch between supply and demand, and the need to deliver a workforce with relevant, up to date IT skills is known as the IT skills gap. The IT skills gap affects all business areas, as well as the IT sector itself.

8. In the IT sector, the demand for a healthy supply of technically skilled Computing and IT graduates remains high. The relationship between CPHC departments and employers is strong. CPHC data show that employers' demand for Computing & IT students to fill placements outstrips the number of students we have available for such schemes. HESA data show that the take-up of sandwich programmes in Computer Science (18,660 students in 2005/6, or 19.4% of all Computer Science undergraduates) is second in numbers only to that of Business and Administrative Studies (36,250 students in 2005/6, or 18.8% of undergraduates), and higher in percentage points. For comparison, the HE sector average is 6.6% for 2005/6. [3]

9. Of all skills sectors, the IT sector is by far the highest employer of graduates, the overwhelming majority of which have no computing or IT related qualifications [13]. The pace of change is high, with an accelerated development profile when compared to other sectors. New technology is produced at a cycle of approximately 18 months [2]. As a consequence, the IT sector is disproportionately affected by the ELQ policy because there is an endemic need both for up-skilling existing Computing and IT graduates, and for re-skilling graduates from other disciplines.

10. The gap between employer demand and the supply of technically skilled employees will grow for the foreseeable future. The proportion of UK advertised jobs that carry a skilled IT component rose from 60% in 2005, to 72% in 2006 [13]. This trend is also noted in the Gartner [10] and Leitch reports [8]. In contrast, there was a 42% drop in students entering Computing and IT degrees through UCAS between 2001 and 2006 [4, 7]. Since 76% of Computing and IT students take 3 years, and 24% take 4 years to graduate [3], the decline will affect the supply of graduates at least until 2010. The supply of applicants to Computing and IT degrees is unlikely to increase as long as perceptions of ICT at secondary school continue to turn students away from considering a career in Computing and IT [7].

Bridging the IT skills gap

11. This combination - of increased demand for IT skills in the workforce, coupled with a decline in Computing graduates for the foreseeable future - means that the need to address the IT skills gap by re-skilling of graduates from other disciplines will inevitably increase [14]. In sharp contrast, the ELQ policy has a detrimental effect particularly on those who engage with education on a part time basis, because it removes funding for all students (not just those registered for a second, full degree), including those studying a single course module as part of professional development (such as working towards chartered status or for CPD).

12. The effects of the ELQ policy cannot be absorbed by offering re-skilling opportunities at post-graduate level in Computing and IT, which are technical subjects, building knowledge and skills progressively. Our provision needs to meet professional accreditation frameworks established, for instance, by the British Computing Society and the Institute for Engineering and Technology. Benchmarks are cross-referenced internationally. The National Qualifications Frameworks limit the amount of undergraduate material that can be taught in a post-graduate qualification. Like other professionally oriented subjects, Computing and IT departments have limited scope to avoid the impact of ELQs without endangering academic and professional standards.

13. CPHC concludes that the impact of the ELQ policy has a disproportionately severe effect on the IT sector and the UK's ability to address the IT skills gap. It curtails the role that universities and Computing and IT departments can play in supporting the economy and the workforce through up-skilling IT workers in a professional context, and in re-skilling graduates from other disciplines to allow them to take up IT related employment.

14. Sustainable access to skilled people and high quality R&D are essential for the UK to remain attractive to inward investment for the ICT sector [1, 2]. Yet, employers are unlikely to be in a position to bridge the IT skills gap by funding the loss of support created by the ELQ policy, for a number of reasons.

- (a) Employers are likely to address any increased skills shortages through off-shoring and immigration [12]. Between 2001 and 2004, 20% of the total work permits issued (110,000) were for IT occupations, though these represent only 3.5% of the workforce [2].
- (b) The IT industry is structured so that it will not be able to meet the funding gap created by the withdrawal of support for ELQs on the required scale and in a sustainable way. NCC data [15] show that the sector is populated by a relatively small number of large corporates capable of investing in education, a shrinking number of medium sized companies, and a rising proportion of SMEs, whose capability to fund education and training is very limited.
- (c) Finally, the extent to which employers in all sectors invest in IT and IT training is known to be particularly sensitive to economic fluctuations. Even if willing to engage with education by direct funding of places, employers' ability to do so depends primarily on other (possibly very short term) factors affecting the business, its profitability and the management's accountability.

15. In Computing and IT also, the ELQ policy affects mainly part time students, whose ability to pay is very limited [12].

16. CPHC concludes that it is unlikely that either employers or students will be able to find additional resource to absorb loss of ELQ funding with respect to bridging the IT skills gap.

17. Employers will be unable to address the IT skills gap by immigrating skilled workers from the European Union, which faces a significant IT skills gap in its own right [16].

Implementation and Exemptions

18. The ELQ policy makes provision for exemptions. Most of these are temporary and will be phased out over three years, hence exemptions are not suited to delivering long term sustainable solutions to problems specifically created by the withdrawal of ELQ funding. Within these limitations, CPHC has several comments.

19. Computing and IT are fast changing subjects (paragraph 9): students taking Computing and IT courses should be exempt, certainly where their degree was obtained more than 5 years ago.

20. The policy exempts Initial Teacher Training courses, but does not cover up-skilling of teachers. A recent Microsoft report [2] noted the lack of coordination between school and University curriculum, and industry needs. There is a lack of suitably qualified Computing and IT teachers in secondary education, and at Key Stage 4 in particular, which undermines our ability to attract high quality applicants [7]. There are insufficient Computing and IT graduates to address this problem by attracting such graduates to teaching careers. The problem can be addressed by developing high quality CPD courses for existing teachers, and for teachers who wish to move to ICT teaching on the basis of non-Computing/IT qualifications.

21. The HEFCE consultation document states that STEM subjects (including Technology) are exempt from the ELQ policy. Although Computing is nominally a STEM subject, it is not included in any funding initiatives directed at STEM subjects, because it is considered as a strategic, but not a vulnerable subject. Under the current proposal, Strategically Important and Vulnerable Subjects (SIVS) are exempt, but this does not include Computing and IT departments, who will bear full impact of the funding shift in spite of the extensive need for re-skilling and up-skilling of graduates.

22. The HEFCE ELQ consultation states that STEM subjects are exempt, and SIVS status is appropriate if "level of provision falls short of demand from employers". This definition of a SIVS would be in line with recommendations of the Sainsbury report [17]. However, to date the substantial gap between supply of graduates and employer demand has not been taken into account when determining SIVS status in the case of Computing and IT. The implication for the ELQ policy would appear to be that in the UK economy, there is a gap between supply and demand to warrant support for students pursuing entire second degrees in veterinary sciences or languages (which are exempt), but not for adjusting the skills basis of the workforce to address the IT skills gap even for students taking a single CPD course.

23. CPHC believes the policy will widen the IT skills gap, and will affect the UK's ability to innovate and hence to compete globally. For these reasons, CPHC argues that a permanent exemption for Computing and IT is justified and in line with the intended effects of exemptions in addressing skills gaps in the UK workforce.

24. Again within the limitations of a temporary exemption based policy, CPHC welcomes the proposal to continue public funding for foundation degrees to ELQ students, because they are important qualifications that address employer needs. However, the same reasons as stated in the consultation document apply to other qualifications that are equally important in meeting employers needs, such as HNDs, HNCs and other vocationally oriented computing and IT qualifications and diplomas, and honours degrees with placements and work-related components, which CPHC argues should equally be exempt.

25. The proposed implementation makes provision for universities to bid for additional student numbers building on employer investment. However, the profile of the IT industry (paragraphs 9 and 14) shows there is limited scope for the direct funding of places. Furthermore, CPHC departments already have a strong relationship with employers, building on in-kind contributions and exchanges, as well as through direct funding. There is a regional dimension to employer contributions, for instance due to specialised clusters (such as games companies in Scotland, and media related applications in the South-East). It is therefore important that Universities have flexibility in articulating how the co-funded aspect of the employer contributions is constituted.

Impact on groups.

26. The ELQ policy has detrimental effects on students holding professional qualifications and on women wishing to take up IT careers.

27. Those holding professional qualifications through non-publicly funded study routes should not be included in this policy. Those studying for such qualifications without having a degree first are often those who have left school early, and have later funded their own up-skilling or received employer support. If they choose to take a degree after such study, they will not be supported by the state, unlike those who follow a traditional route and study for an HE qualification first.

28. The ELQ policy will have a discriminatory effect on women wishing to qualify for employment in Computing and IT. Currently only 20% of IT sector workers are women [2]. The proportion of female UK students pursuing Computing/IT as their first degree on a full-time basis is the second lowest across all subjects (17.11% in 2006 - only slightly better than Engineering and Technology [3]) and so for women, the proportion who take up a career in Computing/IT as graduates of another discipline will be higher than for men. This is reflected in the higher proportion of women who take up Computing and IT qualifications on a part-time basis (36.94%) [3]. Also, more women than men move to Computing/IT after a career break. Employers invest far less in women, whilst women are less able than men to fund their own training and professional development [18], which makes them more vulnerable than men to the ELQ policy. The proposed policy and exemptions would direct women to re-skilling into the health area (which is exempt), further undermining the supply of women into Computing and IT careers, and aggravating the gender imbalance in the IT sector. Effects on women returners in particular would be lessened if the ELQ policy was applied only to those with qualifications obtained less than 5 years ago.

Impact on innovation, R&D

29. A sustainable supply of skilled workers and access to high quality R&D are important to attract inward investment and support innovation [1]. The drop in undergraduate student numbers, and the high demand for Computing and IT graduates are affecting the supply of a healthy cohort of home postgraduate students. Currently, home students are not taking up postgraduate places [3] and at most half the postgraduate ICT student population are home students. This means the UK are training our competitors in the high level skills which are believed to represent the future market for UK industry [1, 2, 10]. This knowledge export positions overseas competitors favourably when attracting business through off-shoring, as they build up a substantial volume of expert knowledge, putting pressure on the UK's ability to add value. For instance, Indian companies are likely to be responsible for around 20% of the UK IT services market by revenues in 2020. Up to 40% of the UK IT services sector by revenue, and maybe as much as 60% by staff numbers, could be delivered offshore by 2020 [19].

30. CPHC concludes on the basis of the evidence available to it in the public domain, that the ELQ policy will widen the IT skills gap, and undermine the UK's capability for innovation through IT added value, and hence the UK's global competitiveness. The policy and its implementation plan are in direct contradiction to other government initiatives and policies, including the UK TI Marketing Strategy for ICT.

31. CPHC recommends that the policy should be abandoned, or that Computing and IT should be granted permanent exemption. At the very least, the policy should not apply to those who graduated more than 5 years ago.

January 11th 2008
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Chair of the Council of Professors and Heads of Computing

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