

# The KS4 qualifications landscape for Computing

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Computing At School

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As the 2017/8 academic year has started, it has become clear that concern is rising sharply about the KS4 qualifications landscape in Computing. Several unrelated factors have combined to produce a situation that, left unaddressed, will result in serious and perhaps permanent damage to the subject.

## Causes for celebration: curriculum

In 2014 the English National Curriculum, for the first time anywhere in the world, established computer science as a foundational subject discipline that every child should learn, from primary school onwards, just as they learn mathematics and natural science. The other nations of the UK are on the same journey.

Other countries are scrambling to catch up, and are watching the UK with intense interest.

There are plenty of challenges, not least that our teachers have not been trained and equipped to teach what amount to an entirely new school subject. But there is strong support and much goodwill, from employers, universities, professional bodies, and schools themselves.

## Causes for concern: qualifications

**Qualifications drive the behaviour of schools, teachers, parents, and pupils.** If the qualifications framework is out of kilter, no amount of curriculum statements, teacher training, or resources can fix it.

At the start of the 2017/8 academic year, we find ourselves now in a perfect storm: that is, a combination of factors that might individually be manageable, but that together are mutually reinforcing to risk serious damage.

These factors are:

1. **The withdrawal of the GCSE in ICT.** We did not much like the existing GCSE in ICT, but its outright withdrawal (rather than reform) leaves the GCSE in Computer Science as the only GCSE in the Computing space. But the GCSE CS was never designed to cover the entire Computing curriculum, and does not do so. Since GCSE ICT was taken by large numbers of students, there is a real possibility that there will be fewer students taking digitally-relevant qualifications at KS4 in 2020 than in 2010.

It is also the case that the proportion of young women, ethnically-black and pupil premium students taking GCSE ICT is much higher than that taking GCSE CS<sup>1</sup>. So the complete loss of a GCSE covering the more applied part of the Computing Programme of Study seems likely to worsen the already-alarming digital divides in computing at school.

2. **The reform of the GCSE in Computer Science.** Along with other GCSEs, the GCSE CS has been made harder and more academic. (And it was, by design, already a challenging qualification.) This change may suit some students, but it makes the GCSE inaccessible to many.

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<sup>1</sup> [https://www.researchgate.net/publication/311595274\\_The\\_Roehampton\\_Annual\\_Computing\\_Education\\_Report\\_2015\\_data\\_from\\_England](https://www.researchgate.net/publication/311595274_The_Roehampton_Annual_Computing_Education_Report_2015_data_from_England)

One extremely experienced classroom teacher, a founder member of CAS and a passionate advocate for computer science as a foundational element of every child's education writes *"I teach in a comprehensive school, involved in Year 9 just embarking on the GCSE options process. Of the 240+ in the year cohort I will advise fewer than 40 to take Computer Science. The current specifications are simply inaccessible for average children. The knowledge covered is too voluminous, the practical too hard, the content too dry. I do not want to suffer the behavioural issues that spring from disaffected children for whom the demands are too much."*

3. **The culling of the ICT options in the Technical Awards; and their late announcement.**

Three years ago there were a dozen Technical Awards in the ICT sector which, although lacking the brand-name of "GCSE", were still a potential path for students who do not want to take GCSE CS. These choices have been radically culled, some justifiably so. Now there are only four Tech Awards in ICT, of which three are non-starters, and the fourth is unattractive.

Exacerbating this situation was the very late announcement of decisions about Technical Awards; some teachers were still hoping that some new Technical Awards would be announced in September 2017, and would have started teaching them the next day.

4. **The reformed practices around Non-Examined Assessment.** The Awarding Organisations have greatly tightened up their procedures about NEA, following a perception that malpractice was widespread in the old Controlled Assessment. There are good reasons for this change, but its unintended consequences appear to be extremely damaging. The assessment tail is now wagging the educational dog. Science has abandoned NEA for this very reason.

These four factors focus on qualifications, but they should be understood in the wider context:

- The new computing curriculum has, in effect, introduced an entirely new school subject (computer science).
- Many teachers lack subject knowledge in computer science, and are scrambling to acquire it.
- Teachers of (say) Year 8 students are being asked to teach the new KS3 curriculum to children who have not enjoyed Year 1-7 of the new curriculum.
- The total number of computing/ICT teachers has decreased by around a third in the last five years.

We may hope that these contextual challenges will eventually abate, but in the meantime they place computing teachers in a uniquely stressful situation.

## What now?

**We are extremely concerned that, if we do nothing, the combination of these factors (plus others such as recruitment difficulties and lack of training) may lead schools simply to abandon KS4 qualifications in computing altogether, and concentrate their over-stretched resources elsewhere.** Once this happens, it may be hard to row back.

It is tantalising to consider that all this is precisely the opposite outcome to that envisaged by ministers when they embraced the ambitious vision of the new Programme of Study for Computing.

There are no silver bullets here: education is complicated. For that reason we have focused in this short document on presenting the challenges, rather than offering pat solutions.

We have plenty of ideas about ways forward but, mindful of the complexity of this space, we seek a dialogue with DfE, Ofqual, and the Awarding Organisations about how best to address these challenges.