# Response to the Royal Society's Report on Computing in Schools

e-skills UK welcomes the opportunity for a fresh look at this area of education. This input is submitted on behalf of the IT & Telecoms sector.

e-skills UK is backed by employers across the sector at the highest level. Our boards include the CEOs of companies including Accenture, BT Wholesale, Cable&Wireless Worldwide, Cisco, HP, IBM, Logica, Microsoft, Oracle, Quicksilva, Tata Consultancy Services and Vodafone, and the CIOs of British Airways, BAA, BBC, the Cabinet Office, Carphone Warehouse, the Metropolitan Police Service, National Grid, Network Rail, Sainsbury's, UBS and Whitbread.

## Context

### Why employers care

e-skills UK is responsible for ensuring the UK has the technology skills to compete in the global economy. Technology holds the key to innovation and is the primary lever for Britain's competitive edge in fiercely competitive markets in every industry. It will underpin the majority of future job creation in the western world. IT professional employment has doubled since the 1990s, and over 1 in 20 of the UK workforce is now employed in the IT & Telecoms sector. Employment in the UK IT industry is growing at five times the all-sector average, and the sector needs over half a million new entrants over the next five years.

Yet there are major issues with IT-related education in schools and the uptake of IT-related subjects in higher education. These issues are seriously compromising the pipeline of future talent in terms of both interest and capability. e-skills UK research has shown that students' experience of IT at Key Stage 4 is the biggest single factor in the dramatic drop in uptake of IT-related education beyond that level. Further, too many IT-related 14-19 qualifications are valued by neither employers nor higher education and therefore add little value to the young people undertaking them.

As a result, employers in the IT industry and employers of IT professionals in all sectors have a very strong interest in improving 14-19 education related to IT and Computing. While the majority of employers are more interested in IT in a business context, they also acknowledge the vital importance of computing as a discipline to the sector.This interest embraces:

- <u>IT/Computing as a subject discipline</u>, with two progression routes:
    - IT as an academic and / or applied academic subject that is valued by higher education for entry to degree courses and valued by employers for subsequent graduate entry into IT or business professional roles;
    - IT as a practical subject that gives students the current technical skills that are valued by employers for direct entry into IT technician level roles (for example via Apprenticeships).
- <u>IT literacy as a key skill</u> (the every day skills in the use of common software applications which every individual needs for learning and work).

### What employers recommend

Our input recommends that:



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- IT/Computing education is radically overhauled as a specific, urgent high priority (because of its strategic importance to the nation and the extent of the problems with the current system) and an HE/sector-backed strategy for IT education introduced;
- There should be clear distinction between IT/Computing as a subject discipline (with qualifications of value to young people who may ultimately seek careers in the sector) and IT literacy (with a simple qualification which is recognised by employers and can be taken at any age).
- The IT/Computing qualifications system is radically simplified, in order to be better understood by students, HE and employers;
- Employers are enabled to contribute effectively to the 14-19 IT/Computing education system at a sector level;

### Why this matters

The key reasons these recommendations matter are that they would:

- **Help young people position themselves with valuable qualifications for high quality employment** in a high growth, high skill sector with excellent earning potential and career prospects;
- **Support economic growth** by strengthening the pipeline into the most strategically important sector in the UK in terms of economic recovery and future potential;
- **Improve the quality of education in IT and Computing as a subject discipline**, which is an area in which young people are currently very badly served, with too many qualifications which are valued by neither universities nor employers.
- **Provide all young people with an IT literacy qualification** which is of value in later life and which does not cause confusion with IT/Computing as a subject discipline.

e-skills UK offers its support in transforming the 14-19 landscape and will be happy to provide further information on any aspect of this input.

## Improving the organisation of IT/Computing Education

The key elements we would like to raise are as follows:

1. **The IT/Computing qualifications system needs radical simplification** in order to be better understood by students and employers. It needs to include a clear distinction between IT literacy as a key skill for all students (regardless of subject choices) and IT /Computing as a subject discipline (which supports progression into higher education and / or employment).

   At the moment, there is an unwieldy catalogue of often poorly understood qualifications which are mostly variations on IT literacy. This does not help young people who may ultimately pursue an IT career (because neither universities nor employers value them in terms of progression), nor does it provide evidence of IT literacy in a way that is recognised by employers. A simplification of the catalogue itself is needed as well as clearer articulation and progression in qualifications rather than the current disjointed approach (e.g. different timescales and developers for GCSEs and A levels.)

   We recommend an HE and sector-backed strategy that incorporates:

   - <u>IT/Computing as a subject discipline</u>, with two progression routes:
     - IT/Computing as an academic and / or applied academic subject that is valued by higher education for entry to degree courses and valued by employers for subsequent graduate entry into IT or business professional roles;
     - IT as a practical subject that gives students the current technical skills that are valued by employers for direct entry into IT technician level roles (for example via Apprenticeships).

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- IT literacy as a key skill (the every day skills in the use of common software applications which every individual needs for learning and work).

IT/Computing is unusual in spanning both the academic and vocational, and we believe that flexibility between these pathways should be actively encouraged through the qualifications system, including hybrid options. Practical learning can range from a student demonstrating their understanding of academic concepts through their application in a relevant context to a student learning specific technical skills that are relevant to current entry level jobs in the sector.

For IT literacy, we recommend a simplification down to the same single IT user skills framework that is already used for adult employability qualifications. The contexts can be easily adapted to be suitable for young people, whilst the skills to be developed are the same regardless of age. This would significantly cut cost in the system, and would have the major benefit of ensuring young people leave education having met an appropriate standard of IT literacy and a qualification that is recognised by employers. Students will achieve this standard at very different ages depending on their experience outside of school, and this should be supported through low cost, high quality, online learning. This approach is already being used to good effect in a number of schools.

2. **Teachers need effective training and resources, supported by industry**. This is a pressing need in IT, where far too many teachers have no relevant qualifications or recent industry experience. e-skills UK has for a number of years worked with industry to provide resources and training opportunities for teachers, which are very well received as an enrichment to teaching.

3. **Many students who are at risk of disengaging from learning do have a strong interest in technology**. Providing a high quality industry-relevant offer within a simple qualifications framework could make a significant difference, if clearly backed by HE and industry and offering skills that are a route to employment.

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