Intellect response to Department for Education call for evidence

Review of the national curriculum

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About Intellect

Intellect is the UK trade association for the IT, telecommunications and electronics industries, representing over 780 member companies from SMEs to large multinationals. We are a not-for-profit and technology-neutral organisation. A list of the members of Intellect's Education Group can be found in the appendix.

Response

Intellect and the technology industry are keen to do our part to support the government's reforms of the national curriculum. Our brief response is focused around the subject of information and communication technology (ICT).

We believe that ICT, in its current form, should not be a statutory programme of study. Take up of ICT courses is falling[1] and the basic ICT skills being generated by the education system are not meeting learners' or employers' needs. Technology companies often have to spend considerable time up-skilling new employees as a result.

Instead, we need to inspire students to develop more advanced computer science (or 'computing') skills and a broad base of STEM (science, technology, engineering and mathematics) skills. We also need to develop students' digital literacy by embedding ICT across the curriculum.

Increase advanced computing and STEM skills

UK technology businesses generate 10% of UK GDP and 15% of UK trade, and employ over 1.5 million people. Many of the jobs our industry provides are high value jobs that drive improvements in productivity and economic growth.

Advanced computing and STEM skills, in combination with problem solving, creativity, critical thinking, interpersonal communications skills and 'emotional intelligence', are essential to maintaining the technology industry's international competitiveness. As the 2006 Leitch review stated, increasing the attainment of such 'economically valuable' skills has the potential to generate a net benefit to the UK economy of at least £80 billion over 30 years (equivalent to an annual boost of £2.5 billion).

Computing in particular should be a discrete subject discipline available to students from Key Stage 3 onwards. Options should be available for students to follow a progression path in computing, where they can learn increasingly more advanced skills if they so choose. Moreover, computing should be one of the subjects contributing to the English Baccalaureate.

Such advanced skills can offer substantial knock-on benefits to the economy, so the government should provide explicit support and emphasis for them within our education system.

Develop basic digital literacy by embedding ICT across the curriculum

All employers need employees that are 'digitally literate' – ie equipped with basic ICT skills. However, we believe that students can better develop these skills through engagement with ICT and interactive multimedia technologies across the curriculum. This is much preferable to having ICT as a statutory subject in its current form, which effectively discourages students from progressing to the more advanced computing and STEM courses that develop the most economically valuable skills.

[1] For example, GCSE courses in ICT show a decline in numbers of 57% between 2005 and 2010.

ICT is a key tool to support teachers, and it has long been shown that educational outcomes can be substantially improved by embedding ICT as part of the learning process[2]. By using a range of technologies as part of maths, science and English lessons (even Shakespeare, as the London Grid for Learning demonstrates), for example, students can become more engaged in what they are learning, exercise their creativity and pick up basic ICT skills.

Using technology at home is not enough to develop digital literacy. Students need to learn how to use technology to solve problems, which in the future will help them to address business challenges. Employers (and in particular technology businesses) need people that are skilled at applying technology to improve business processes or encouraging the development of new products and services.

Implementation

The investments of recent years have led to a decent supply of teaching tools across UK schools, but the technology at hand is not often used to full advantage. We believe that teachers should have the flexibility to decide how best to use ICT and interactive multimedia technologies. But to ensure teachers understand what is possible, they need training in some of the myriad ways that technology can be used to enrich the learning process (both inside and outside the classroom).

We therefore need to conduct additional teacher training on how ICT can be embedded in lessons. This is set to become even more important as we transition from a computer lab environment to a more personal device and pupil centric model.

In-service training is particularly needed in computing, where many teachers are willing but under-qualified. One of the main reasons students are being turned off of computing courses is that under-qualified teachers are covering lessons. To ensure we have industry-trained personnel delivering lessons, we need to train those willing to learn and need to take more advantage of the existing teaching expertise.

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[2] (Schacter, 1999) (Mann et al., 1999) (Laferrière, Breuleux, & Bracewell, 1999) (Becta, 2002) – from literature review by Newhouse, 2002

Appendix – List of Intellect Education Group member companies

3M UK Plc
Accenture (UK) Ltd
ActivIdentity UK
Advanced Business Solutions
Aiston Consulting Limited
AMTEC Consulting plc
Apple (UK) Ltd
Aspire Systems
Atkins Management Consultants
Atos Origin
Atrium Group Limited
Babcock Communications Ltd
Beachcroft LLP
Bird & Bird
BrightLemon Ltd
Brocade Communications UK Ltd
BT Group Plc
Bull Information Systems Ltd
CA technologies
Cable & Wireless UK
Capgemini UK Plc
Cisco Systems Ltd
Cognizant Technology Solutions UK Limited
Cognos Limited
Computacenter (UK) Ltd
CORE ECS (UK) Ltd
Core Education and Consulting Solutions (UK) Ltd
Daden Limited
Dell Corporation Ltd
Deloitte
Detica Ltd
Eduserv
EMC Computer Systems (UK) Limited
Ericom Software (UK) Ltd
Ernst & Young LLP
ESP Systex Ltd
Excelerate Technology Ltd
EzGov UK Ltd
Fry-IT Ltd
Fujitsu
Fulcre Partners Ltd
GamCom Solutions
Getronics UK Limited
Hadfield Consultants
Hao2.eu Ltd
Hardcat Limited
Hays Specialist Recruitment Ltd
Hewlett - Packard Ltd
HP Enterprise Services
Initiate, an IBM Company
Intel Corporation (UK) Ltd
Investec Investment Banking
Kable Limited
Knowledge Powered Solutions Ltd
Konica Minolta Business Solutions (UK) Ltd
Launchpad Europe Ltd
LinuxIT (Europe) Ltd
Logica
Logotech Systems
Mahindra Satyam
Mass Consultants Limited
Microsoft Ltd
Mouchel Limited
NComputing UK Ltd
NICE CTI Systems UK Limited
Northgate Information Solutions UK Ltd
Norton Rose LLP
Oakleigh Consulting Limited
One Point Consulting Limited
Open University
Oracle Corporation UK Ltd
Partnerships & Alliances Limited
Penta Consulting Limited
Pinsent Masons
Red Hat UK Ltd
Research In Motion UK Limited
Rightscom Limited
RM Data Solutions
RM Education Solutions
RM Plc
RPM Business Consulting Limited
SAS Software Limited
S-Cool Ltd
Serco Solutions
Software AG UK Limited
Sopra Group Ltd
ST Engineering (Europe) Ltd
Steria Limited
Sybase (UK) Limited
Symantec (UK) Ltd
Teleperformance
TestPlant Ltd
This is Business Coaching
Tibco Software Ltd
Tribal
Unit4 Business Software Ltd
University of Kent
Vangent Ltd
VersaPac UK Ltd
Whitespace Waste Software Ltd
Wragge & Co LLP
Xerox (UK) LTD
XOR Ltd
Zeta Compliance Technologies Limited