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Computer Science in Schools in England and Ireland – context and current developments in 2017

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Abstract

This keynote describes the recent developments in computing in schools in England and the Republic of Ireland, in the light of a historical account of educational computing since its early days in the 1970s. In England, the recent (2014) introduction of a 'rigorous' computing curriculum was justified by UK politicians to address a digital skills crisis, and, at the same time, the English Information and Communication Technology (ICT) curriculum and examinations were set to be discontinued. Figures from 2015 show that only 28% of schools entered pupils for the new General Certificate of Secondary Education (GCSE) in computing (for pupils aged about 16) and only 24% at Advanced Level (for pupils aged about 18). This means that no course leading to a qualification in computing is actually being offered in three quarters of all schools, and makes the opportunity for learning about computing very slight once the ICT qualifications are gone. This is because the new computing qualifications will demand greater knowledge from teachers who are rarely Computer Science graduates. The outcome may mean a less well educated population in terms of both vocational capability and personal fulfilment. Ireland has had no single equivalent of the English ICT curriculum. Uptake of technology-related subjects has been rather low and heavily gendered towards males, while programming activities in recent years have taken place chiefly outside the mainstream curriculum. Current developments include a new Leaving Certificate Computer Science qualification (for pupils aged about 18), to be available from September 2018; the draft curriculum has now been published for consultation. The strategies in the two countries will be contrasted and critiqued in view of their historical context and their current approaches

Richard's bio

Dr Richard Millwood is Assistant Professor in the School of Computer Science & Statistics, Trinity College Dublin, directing the MSc in Technology & Learning and supervising six PhD students in the context of the Centre for Research in Information Technology in Education (CRITE). He gained a BSc in Mathematics & Physics at King's College London in 1976 and became a school teacher. From 1980 to 1990 he led the software development of educational simulations in the Computers in the Curriculum Project at Chelsea College London. He then worked with Professor Stephen Heppell to create Ultralab, the learning technology research centre at Anglia Polytechnic University, acting as head from 2005 to 2007. He then researched innovation in online higher education in the Institute for Educational Cybernetics at the University of Bolton until 2013, gaining a PhD by Practice: 'The Design of Learner-centred, Technology-enhanced Education'. Current research interests include learning programming and computational thinking.

Elizabeth's bio

Elizabeth Oldham holds Master's degrees in Mathematics and in Education. She qualified as a teacher, and taught in a secondary school in Dublin. In 1973 she was appointed as a lecturer at Trinity College Dublin, the University of Dublin; she taught there in the School of Education until 2011, is now an Adjunct Assistant Professor in the School of Mathematics, and also works in the college's Centre for Research in IT in Education (CRITE). As a member since the 1970s of the Computers in Education Society of Ireland, she has contributed over the years to the Society's activities in lobbying for the introduction of suitable courses on computing into the Irish curriculum and for appropriate professional support for teachers. Her recent publications focus on teacher education, mathematics education, computer science education and the use of technology in teaching and learning.