

Re-inventing and Re-engaging: The Royal Society of Edinburgh & BCS Academy of Computing's Computing Science Exemplification Project

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Abstract

In 2011, Google Chairman Eric Schmidt came to Scotland and expressed concern at the state of Computing Science (CS) education in the UK's schools. This was a timely intervention: in Scotland, a new national curriculum is providing an opportunity to cement CS and computational thinking firmly within the curriculum and reverse a recent decline in uptake.

The Royal Society of Edinburgh and British Computer Society Academy of Computing seconded Jeremy Scott, Principal Teacher of Computing at George Heriot's School in Edinburgh to develop resources that would help teachers deliver CS using new pedagogy in a way that's relevant to students' own digital lives.

To reinvent school CS, we must provide learners with an experience that's accessible, exciting and real-world – but has computational thinking at its core. What better way than to tap into the mobile revolution? So prominent among these resources is *I Love My Smartphone*, a CS course in mobile app development using App Inventor.

Drawing upon recent work at the Universities of San Diego and Glasgow, the resources provide teachers with support and students with an engaging experience of CS. Follow-up questions stress computational thinking, whilst App Inventor gives a real-world context for learners who sometimes struggle to see the relevance of programming to their lives. Mobile app development also enables meaningful interdisciplinary learning – a cornerstone of Scotland's new curriculum.

App Inventor's approach to implementing procedures has also helped learners understand functional abstraction – a well-known hurdle for students of programming – with clear benefits when those learners have moved to text-based programming environments.