

A photograph of two young boys in school uniforms (blue sweaters over light blue collared shirts) sitting at a desk. They are both looking intently at a tablet computer. The boy on the left is pointing at the screen, while the boy on the right has his hand on his chin, appearing thoughtful. The background is a blurred indoor setting, possibly a classroom or library.

CRACKING THE CODE

THE NEW COMPUTER SCIENCE CURRICULUM IS A POSITIVE DEVELOPMENT, SAYS MATTHEW KYNASTON, BUT POSES SOME SERIOUS CHALLENGES FOR TEACHERS – COULD A SOLUTION COME FROM BEYOND THE SCHOOL GATES?

Back in 2011, Google chairman Eric Schmidt criticised the British education system for not doing enough to support the growing digital media economy by nurturing the next generation of talent. “Your IT curriculum focuses on teaching how to use software, but gives no insight into how it’s made,” he declared. “That is just throwing away your great computing heritage”. It’s not a warning that has fallen on deaf ears. Next year will bring sweeping changes to the UK school curriculum that will see children as young as five years old being taught the principles of coding.

Now, growing up in a family of teachers, I know all too well that many relish the challenge of learning new subject material to teach their classes. This process usually involves buying a few new textbooks, reading through them over the summer break and then planning the content of lessons around the structured syllabus. This can be incredibly rewarding; the teacher gets the chance to learn about an interesting subject, going on to paint knowledge with confidence across a room full of blank canvases.

However, what if for one particular subject there were no suitable textbooks, nor tried-and-tested lesson material to draw from? What if the resources to hand were out-of-date the moment they were published? And what if the canvases were not so blank? In fact, what if some students were likely to know more about the new topic than the teacher, right from the start?

This is what teachers in the UK are facing come the roll-out of the 2014 curriculum. Pupils will be taught coding from Y1; by the end of KS3 they are expected to be proficient in two or more programming languages, understand binary digits and use “multiple skills to undertake creative projects”.

This development has seemingly raised anxiety levels within the profession. A recent survey conducted by MyKindaCrowd showed that 74% of ICT teachers do not believe they currently have the right skills needed to deliver the new computing curriculum. In



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addition, 69% professionals feel that the government won’t provide them with enough support to teach the subject content well enough. And whilst it’s true that the UK job market today is screaming out for good developers, the market itself is seldom stable; languages and coding practices that are in vogue today might not be so in the next few years. In truth we cannot expect schools to be able to keep abreast of these changes on their own.

Ahead of the game

Teaching programming from an early age is definitely the right move for our education system. The more talented engineers and programmers we can grow and develop, the brighter the prospects are for the future of Britain’s digital economy – and of course, as in all academic subjects, there are also many benefits to learning to code that aren’t directly related to employment. However we must find a way to ensure that what is being taught is relevant, correct and comes from those who are confident to teach it.

One clear way that schools can give their students the best possible chance of learning to code, is by looking to align themselves with digital agencies and software development companies in the wider community. By incentivising schools and businesses to work together to provide

topical and relevant education resources to children, pupils will also get invaluable insight into the digital industries and open their eyes to the opportunities that are out there waiting for them.

There are currently many private and charitable schemes that encourage these kinds of relationships – Code Club and BIMA D-Day being fantastic examples. The nationwide BIMA event in October linked digital professionals to schools around the country. At the digital agency where I work, Cyber-Duck, we sent a designer and a programmer over to a local school in Hertfordshire, where they gave participants insight into what we do and answered questions from students about how to develop a career in the digital industry. We then set a couple of challenges that encouraged the children to learn and exercise some basic skills in programming and design.

As a result, we are now in regular contact with the school; we’ve even given one student work experience during his half-term, to give him a true feel of what it is like to work in our sector.

According to the survey mentioned earlier, 96% of teachers would welcome the closer involvement of businesses to help them build practical skills and knowledge for their students. If SMEs like ours are able to invest the time into helping schools and teachers get up and running with their new computing curriculum, we implore the government to incentivise other concerns to do the same. By getting more professionals into classrooms and helping to train and support teachers on subject material, we will give students equal opportunity and the best possible chance in learning and developing their programming skills. Only this way will we be able to nurture the next generation of talented, British-educated coders and programmers that Eric Schmidt seeks and that this country needs.

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★ THINK OF THE CHILDREN...



At a recent Web Summit in Dublin, I got the chance to meet Adam Barry, an inspirational young Irish coder who has already produced an application that can be purchased in the App Store (it’s called Pick Up Lines, and is credited to ‘Niall Barry’). And when I say

‘young’, I mean that Adam turned 12 on December 21st, 2013. His father owns an IT company in Ireland, and Adam first got interested in computers and how they work when he was seven. He is now proficient in three programming languages: Java, HTML and Javascript.

All this knowledge and experience has come from learning and experimenting in his own free time, which he clearly enjoys. Aside from building and coding independently, he gets a ‘formal’ education from a private tutor currently teaching him Java, and he regularly attends the local Coderdojo. When asking Adam about the support he gets from the education system, he was proud to tell me that he has actually been asked to help teach ICT lessons,

imparting his knowledge on Java. However he was keen to add that he has “never, ever, ever” been taught to code in his school. Adam is obviously a rarity – however, he is not alone. There are plenty of kids of his age who are already to learning to code, and are keen to explore and develop the technologies that make up the systems around them. If he’d been given resources and support within the education system from the age of five, one can only imagine what Adam may have already achieved by now – instead of helping others catch up (including his teachers) he could be given guidance and direction, honing his skills and ultimately producing even more incredible programmes and applications.

By the end of the Summit, Adam had hooked up with a company called ChoreMonster, and is now their spokesperson in Ireland. It’s largely down to external and extra-curricular support that he has advanced so far ahead of his classmates. I’m left to wonder if we might have uncovered more talents like Adam amongst his peers had they been exposed to the same opportunities to learn programming that he had.