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ONE OF THEM IS A COMEDIAN AND THE OTHER AN EX-POP STAR WHO PRESENTS TV PROGRAMMES ABOUT SCIENCE – BUT NEITHER IS INTERESTED IN GLAMOURISING STEM FOR STUDENTS, REPORTS SAL MCKEOWN...

Teachers are accustomed to hearing that mathematics and science are key skills for the world of work and that their role is to make them more engaging and attractive to their learners. So it was a surprise to discover recently that two individuals who have arguably done more than most to raise awareness and enthusiasm around STEM amongst the general public over the past few years, Professor Brian Cox and comedian Dara O Briain, are of the opinion that many learners will simply never be excited by these subjects and are, in fact, not at all in favour of developing a populist approach in the classroom.

Talking to Charles Clark, former Labour Party Secretary of State for Education and Skills at the recent Education Show in Birmingham, they both called for more challenge and academic rigour in schools. They wanted to see pupils studying maths and science for their own sake and not just, as Brian Cox put it, as "a way of turning young people into cannon fodder for the knowledge economy."

Cox was on the point of accepting a place on a Communications Engineering course at Manchester when he left school but was offered a music contract, which he accepted instead. One of his key messages to school leavers was, "Do what you're interested in. Many young people make the wrong choices at 17 or 18." Now he is well known for his programmes for the BBC – such as *Wonders of Life* and *Stargazing Live* – but he also works at the CERN laboratory in Geneva, Switzerland on the ATLAS experiment at the Large Hadron Collider, and teaches first year students at Manchester University.

Independent thinking

While he agreed that good teachers could make a difference for many children, he was adamant that the key skill in teaching was to turn young people into independent learners. "When 18-year-olds come to study quantum mechanics and relativity at Manchester University their job is to become physicists," he insisted. "They have to manage the transition and know when they understand something and when they don't. They must take responsibility for their own intellectual growth and develop intellectual self-confidence."

Britain is going to need more engineers in 2020 and an obvious way of increasing numbers is to encourage more women to study science and mathematics. Research, Cox claimed, has shown that there is a significantly higher uptake of these subjects in girls' schools and there might be a case for running single sex science classes in mixed schools. He was very much against 'glamourising' the job but felt it was important to make young people aware that they are "living through a great age of discoveries." He wanted to see closer links between universities and school so teachers would learn about the latest discoveries and could make pupils aware that, "science is not the domain of old men."

That's entertainment

For men who spend their time making difficult concepts accessible to ordinary people, it was revealing that both Cox and O Briain were unashamedly in favour of encouraging and focusing on the so-called 'nerds' in schools. Indeed, O Briain, who has a degree in maths and theoretical physics, said: "I have no interest in telling anyone who doesn't like mathematics that maths is fun. Any effort spent getting 'cool kids' to pay attention just bores those who will go on to spend their lives doing the subject."

He went to an Irish speaking school and is an advocate of intellectual rigour in the classroom. He has been vociferous about the pseudo science of programmes such as Gillian McKeith's *You Are What You Eat*, because he is outraged that science can be misappropriated in the name of entertainment. And last year he called for examinations to be made harder after he completed a one-hour GCSE maths paper in ten minutes and gained a grade A*. He felt there should be more demanding papers for the more able, so they could really stretch themselves.

A similar message delivered by a politician would no doubt be labelled as elitist by the teaching profession but both Dara O Briain and Brian Cox are fuelled by a love of their subjects – as well as an understanding of their place in the world – not an ideological agenda. Not everyone will agree with them... but as we consider ways of raising the profile of STEM subjects and careers in schools, their views must surely be worth bringing to the table?