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Regulars

Pluschat



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Wisdom from above



The Houses of Parliament

Inspired by the Smith Report into post 14 maths education, there was a [discussion in the House of Lords](#) on 19th January 2005 about the state of maths teaching in our schools.

Plus has already examined Smith's report (see [The permanent revolution](#) and [Post-14 post-Smith](#)), though perhaps not at such length or as politely as it was examined by the honourable Lords, but reading through the Hansard transcripts, we were struck by a number of gems which we felt were worth bringing to a wider audience.

Lord Preston said that he had looked through some recent A level papers – and been able to do all the questions. With becoming, and perhaps false, modesty, he concluded that: "I am bound to say that tells me absolutely that standards must have fallen."

Lord Lucas then made some pointed remarks about the quality of mathematics within society: "If ... we ended up with a better understanding of statistics, it would double the quality of Ministers overnight." According to Lord Moser, a previous President of the Royal Statistical Society, the problem isn't just in Parliament. He said: "I know from my decade as head of statistics in this country that there is more discomfort in the presence of numbers than was ever recognised by any of my European or even American colleagues." He quoted some disturbing numbers: "If you take what is internationally regarded as the definition of severe innumeracy – people who cannot multiply two figures together and certainly cannot calculate change in the supermarket – 24% of the adult population are deeply and seriously innumerate ... In Germany the equivalent figure, with the same test, is 7%."

Baroness Sharp of Guildford warned that 30% of those who spend 10 years studying mathematics in our schools come out with no qualification in the subject. Lord Hanningfield that the political problem is also personal: those who obtain A–level maths will probably earn 10% more on average than those who do not.

The point was then given a historical perspective by Baroness Andrews: "I shall not quote from the Cockcroft or the Robbins reports. I merely say that: 'The failures in arithmetic are mainly due to the scarcity of good teachers'. That is from an HMI report of 1876. I am sure we could find a Tudor quotation as well."

An interesting initiative by a hi–tech Yorkshire firm, Filtronics, which employs maths graduates, was described by Lord Wallace of Saltaire. "Filtronics attempted to stimulate maths teaching and qualified mathematicians who it could recruit in west Yorkshire through a six–year scheme, in which it worked with relevant university maths departments and schools to provide small bursaries of £750 to people who stayed on at the age of 16 and studied maths. It underwrote schools with fewer than 10 students in their A–level maths classes to carry on teaching the subject at that level rather than to take the easy way out and stop it. It also sent professionals into schools to talk to 14 year–olds about why maths is fun and why maths is useful in your future career. They claim that over six years, and at a cost of £125,000 a year, they have enormously increased the throughput of students staying on to study maths in schools."

Lord McKenzie of Luton, apologising for lowering the tone of the debate, pointed out that darts cannot be played without some mathematical skills. And Lord Tunnicliffe, inspired by this sudden move away from the classroom and into the pub, recounted to his noble audience a conversation he had had with someone who drinks in his local, who switched career from information technology to teaching. He assured the noble Lords that the gentleman in question had found "the arrangements available to change career ... flexible and rewarding ... However, he faces one crucial question from time to time from pupils – 'Sir, why are we doing this?'"

Lord Peston neatly wound up the debate by returning to the subject of darts, displaying a commendable knowledge of the subject. "I swear that I read in the paper not long ago that there was a crisis in the darts business because far too many darts players cannot work out the score and, in particular, cannot work out what double they need to win." Then, perhaps worrying that he had unintentionally revealed a side of his character previously unseen in the noble House, he added, "I am certain that I read that somewhere."

So, in the words of Lord Peston, "we have a maths crisis in darts, as well as everywhere else." Surprisingly, Adrian Smith sees to have missed this fact. Maths education clearly still has some way to go.

Reader's corner

Dear Plus,



All the country needs?

Your thumbnail biography of Howard Aiken made me remember meeting him when I worked at the Palo Alto Research Laboratory of Lockheed Missiles & Space Company in the early 60s. He was a consultant to the Lab, and I was called upon to present my research project to him, in the presence of the director of the Lab. He listened to me for about two minutes, then interrupted me to say that what I was talking about had been a commonplace at Harvard when he was there, and that no one could pull the wool over his eyes. He had not even let me get to the gist of my explanation, and his rudeness and impatience were such that the director later apologized for his behavior, and told me not to worry about his scornful dismissal of my project.

Nevertheless, I write to point out that the remark you quote from Aiken to the effect that only six computers would be needed in the entire country does not mean what it is so often taken to mean. Note that Aiken was speaking of the computing needs of the country, and he meant just mathematical computation, not the hundred and one other uses that have been found since for the "computer." He was underestimating the needs of the country for even that one application, of course, but his words were not as foolish as they seem to the modern reader who thinks of word processing and graphics and networking and email and many other things when he hears "the computer." The very narrowness of Aiken's understanding of what the computer was good for is what explains and excuses his apparently fantastic underestimate of how many machines would be needed.

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If you have anything to say about these or any other topics that might be of interest to *Plus* readers, e-mail plus@maths.cam.ac.uk. Let us know if you are happy for your email and our response to be published in *Plus*. (We may edit emails before publication.)



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