

A World-class Mathematics Education for all our Young People

The announcement, in January 2009, that Carol Vorderman was to advise David Cameron and Michael Gove on how mathematics education could be improved in England was treated with some scepticism among the mathematics community. Was this, people wondered, just an exercise in using celebrity culture to give politicians a few sound-bites?

Fast forward two and a half years later to the publication of the report and a very different atmosphere prevailed with a broad welcome not just from the mathematics community but from many others, including the Secretary of State and bodies as diverse as the CBI, the NAHT, the Royal Society and, of course, the IMA. What happened to produce such a turn-around?

It was my good fortune to be one of the small task force Carol invited to work on the report. There were three others: Richard Dunne, with a background in teacher training, Professor Chris Budd CMath FIMA from the University of Bath, and head teacher Pepe Rahman-Hart from The Academy of Trinity, a primary school in Radstock. To ensure its independence, we all gave our time for free. In addition, two research assistants worked on the project for some of the time: Coralie Colmez, a recent Cambridge mathematics graduate, did much of the early spadework and compiled the early drafts of the report; Dr Stephen Lee CMath MIMA, with his particular expertise in unravelling national statistics and other information sources, was seconded from MEI. As the work progressed, I took on increasing editorial responsibility and so became lead author.

A really important feature of the task force was that we had our own peers to answer to; for example, Chris was chair of the LMS Education committee at the time and I was a member of ACME. This wider responsibility extended to Carol who is seen as the voice of mathematics by a large number of ordinary people; they stop her in the street with stories of the problems their children are having at school, together with the problems they themselves encountered as children.

The work turned out to be a journey of discovery for us all. Although we knew a lot about our own areas of expertise, we learnt much about other sectors from each other. But there was more to it than that. For the first meeting, Carol asked each of us to list five points of concern; issues of the day featured strongly in our lists but as time went on we came to see many of them as symptoms of deeper problems. This was to prove crucial for the final report; as one draft followed another, the emphasis moved progressively away from current local difficulties towards the real issues.

Many people contacted the taskforce and presented their views, usually by e-mail. We considered them all, of course, but they were a self-selecting sample, with all the problems implied by that term. It was essential to evaluate what they said; I guess many professional colleagues realised why we had started asking them strange questions, and we are indeed grateful for their advice. A related concern was that any quotes we included should be representative of a significant body of opinion; right up to the final draft we found ourselves questioning and cutting them.

The report was commissioned soon after David Cameron became leader of the opposition, and so technically it was written for the Conservative Party. However, our work was totally non-political. We worked on the principle that the best advice we could give was what was best for mathematics in the country. However, the circumstances of the report did provide an opportunity to adopt a more open style than is commonly used in such documents. If it comes across as being hard-hitting, then we have achieved our intention. There is much to be improved in our mathematics provision and we did not want to lose the opportunity to say so by being mealy-mouthed.

The task force members all developed a great respect and affection for Carol. Her background led her to ask questions that challenged the status quo, and she was determined to do so. Without her input, the report would have been a mere shadow of what it turned out to be. How is it, for example, that that after 11 years of sitting in mathematics lessons, a good half of our children have learnt little more than to hate and fear the subject?

The report is particularly critical of the systemic failure to meet the needs of young people and much of the blame for this has to lie, over many years, with governments and their agencies. Previous reports have tried to make the same point but their message got subverted so that they ended up being seen as a criticism of teachers. We were very anxious that this should not happen with our report and so we included quite a large number of vignettes, many of them showing good things that teachers are doing. Putting these together was a particularly enjoyable task.

There are many recommendations and we would obviously like to see all of them implemented. However, speaking just for myself, there are three outcomes that I would particularly like to see.

- Mathematics is removed from general regulations and so really does enjoy the status of being a subject of critical importance.
- Everybody continues with mathematics, in a form that is appropriate to them, up to the age of 18. This will enable major improvements in higher education, and it will mean that future primary school teachers are much more confident in the subject. But it has to be done well.
- There are two GCSEs in mathematics and their structure and content are such that a very much higher proportion of 16 year olds are able to engage with mathematics.

We expected the media would give a lot of attention to the report, and that indeed proved to be the case. As a result a lot of people have actually read it; if you are not among them, may I commend it to you? □

The full report is available at:

http://www.conservatives.com/News/News_stories/2011/08/~media/Files/Downloadable%20Files/Vorderman%20maths%20report.ashx

and the IMA response can be found on our website: http://www.ima.org.uk/viewitem.cfm?cit_id=383799

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