

Science Centres

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What are science centres for? They are places where anyone, especially children and families, can get to grips with science. There are more than 40 science centres in the UK, which in total attract some 5 million visitors each year.

Thirty years ago I went to work at Yorkshire Television, and the first item I put on the screen was about the slipperiness of banana skins*. This was for the series *Don't Ask Me*, starring Magnus Pyke, David Bellamy, and Miriam Stoppard. For six months of the year this programme went out every Wednesday evening, between *Crossroads* and *Coronation Street*, and attracted ten million viewers. At the same time the BBC showed *Tomorrow's World*, which had a similar audience, plus *Antenna*, *QED*, and *Horizon* - and there was *How*, aimed specifically at children. The total number of viewer-hours of science programmes must have averaged more than five million a week.

There were only three channels then; now there are dozens of channels, but almost no science. All those programmes have gone, apart from *Horizon*, which seems to have become a series of disaster movies. There is no longer any science programme to attract families, and for kids to talk about at school the next day.

Meanwhile in school, teachers are under pressure to steer kids away from difficult subjects like physics, because the league tables have become paramount; any pupil who risks scoring less than A+ is likely to drag the school down the tables.

In the last decade there has been a drastic reduction in the number of university applications to study physics, chemistry, and engineering. As a direct result the country is now seriously short of engineers and physics teachers, which has led to the worst sort of positive feedback loop – fewer physics teachers means fewer physics and engineering students, and

so on. I suggest that the disappearance of science programmes from the television screen has been a major cause of this decline.

The future is science. Scientists are vital to the success of the country. How can we persuade young people that science and engineering are worth studying? They need to experience the fascination of science for themselves, and preferably by doing rather than merely hearing. Apart from formal school classes, the best forum we have is the network of science centres, where children and families can indeed interact directly with science.

This is the function of science centres. They have taken over from television as the primary source of scientific ideas and information. Just as the whole family would sit down to watch *Don't Ask Me* and *Tomorrow's World*, so whole families visit science centres to be amazed, delighted, and informed by the interactive exhibits. The centres provide not only family entertainment – and last year at-Bristol beat places like Alton Towers to be voted Family Attraction of the Year – but structured learning for school parties, and continuing professional development for teachers. Their outreach programmes deliver demonstration kits to schools.

As part of the millennium celebrations, £1000 million was invested in 17 science centres, which were then left to sink or swim. Two have already closed, and a third has been forced to close half its facilities and make many staff redundant. This is a terrible waste of money and resources.

No science centre in the world has ever been self-sufficient. They need continual investment, both for



maintenance, and in order to build novel exhibits, so that visitors come back. Appealing for capital investment from the Wellcome Trust, from RDAs, and from other local sources is possible, but getting ongoing funding is difficult.

Science centres typically obtain 50 per cent of their running costs from ticket sales, and receive Government subsidy in Wales and Scotland. In England, however, where museums, schools, and libraries are funded by Government, science centres are not, even though they perform several of the same educational functions.

Four hundred years ago Francis Bacon wrote that “Whether or no anything can be known, can be settled not by *arguing*, but by *trying*.” In other words he was a pioneer advocate of hands-on science.

Children today want to be hands-on doing things – they expect instant gratification. This is what science centres can provide. By linking up and providing outreach to schools they can feed and spark off each other. Centres shouldn't be expected to be self-financing, but an educational resource, investment in which is an investment in the country's future success – and that is why the country's science centres deserve Government support.

*In case you were wondering, we organised the measurement of the coefficients of friction between shoes and concrete paving, moderated by lubricants. These were the results:

Shoes	dry	on 20/50 motor oil	on banana skins
CoF (μ)	0.70	0.35	0.16

So banana skins really do provide superb lubrication.