

The Nuffield Foundation Newsletter

Winter/Spring 2006

Twenty first century science

Why is science taught in schools? One reason is to inspire and educate those young people who will go on to use science professionally in their working lives, as scientists, engineers, doctors, technicians and nurses. A second, equally important, is to develop in **all** students the scientific literacy needed to play a full part as active and informed citizens in a modern democratic society, where science and technology play a key role in shaping everybody's lives, as householders, parents, patients, voters or jurors.

"The big change from the course we were doing is the greater relevance to the majority of children's lives, both now and in the future" SETTLEBECK HIGH SCHOOL, CUMBRIA

Historically the education system has emphasised the first and neglected the second. In a major new initiative the Nuffield Curriculum Centre and the Science Education group at the University of York have been working with schools all over the country to develop an innovative course that

will meet both requirements. *Twenty First Century Science* is a suite of new GCSE science courses for 14- to 16-year-olds intended to match the diversity of students' interests and aspirations.

"The courses give young people the opportunity to think for themselves and attain informed views and opinions."

WESTHOUGHTON HIGH SCHOOL,
BOLTON

All students study Science, leading to one GCSE. This features the kind of science that everyone, including future scientists, needs to understand - as citizens. Those who may go on to higher level academic or vocational courses can also opt for one of two Additional Science GCSEs. *Additional Applied Science* provides a sound basis for progressing to a range of technical, pre-vocational and vocational courses involving science.

Additional Science provides a basis for progressing to traditional AS- and A-levels in the sciences.

Courses and related resources now exist and teaching will start in September 2006. [www](http://www.nuffieldfoundation.org)



Chris Coldough, St Michael's RC School, Billingham

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In Brief

Welcome to the Nuffield Foundation Newsletter, which highlights our current areas of grant making and focuses on the outcomes of the projects we fund.

[www](http://www.nuffieldfoundation.org) Further information can be obtained by clicking on the live link.

The Newsletter is published three times a year and you can obtain further copies or ask to be put on the mailing list by contacting the Foundation. If you have any comments on the Newsletter we would be delighted to hear from you.

www.nuffieldfoundation.org

The
Nuffield
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Talking Point: measuring performance

Grant giving foundations increasingly report on the **outcomes** of the work they support, as opposed to simply describing the grants they have made. This is entirely to be welcomed. Grants are, after all, only a means to an end.

Less welcome is the growing pressure to assess performance against organisational objectives set in advance. This is a requirement of the new Summary Information Return that all charities above a certain size will in future be required to submit, along with their annual accounts.

The principle of self reflection behind the requirement is welcome, but how practical is it for grant giving charities like the Nuffield Foundation that have broad and fundamentally long term objectives?

The measurement of social change is not straightforward and ascribing it unambiguously to the influence of individual projects or programmes is rarely possible (though sometimes tempting). It is frequently possible to identify outcomes of grants and projects in the form of simple numerical indicators (grants made, papers published, copies sold, numbers attending courses and so on). But these are no more than links in a causal chain that may or may not lead to change. The risk is that they can be confused with real effects, and thus themselves become targets. Objective indicators are of course important, but all they can do is inform human judgment, not substitute for it.

Anthony Tomei
Director, The Nuffield Foundation

Children in the middle



www.johnbirdsaill.co.uk

The issue of disputes over parental contact with children after separation or divorce has been much publicised and it is frequently asserted that such disputes are managed much better in other countries. A study funded under the Foundation's Child Protection and Family Justice Programme examined the processes applied in Western Europe, Australia, Canada, New Zealand and the US and has resulted in a briefing paper to facilitate a more informed and evidence based approach to learning from other jurisdictions.

Joan Hunt and Ceridwen Roberts from the Department of Social Policy and Social

Work, University of Oxford selected types of intervention not commonly found in the UK and examined evidence for their effectiveness. Although they found no panacea, the researchers suggest looking in more detail at this wider range of approaches to see if they could be adapted and tested for the UK and also to stimulate home-grown ideas here. An extension of the range of services may reduce the numbers of families for whom conflict becomes intractable and the number of children whose lives are lived in that shadow. **www**



www.enm.bris.ac.uk/staff/hinke/crochet

Chaos & crochet

In May the Nuffield Foundation will make awards to new lecturers in Science, Engineering and Mathematics to help them develop independent, innovative research projects. Previous award holders include mathematician Professor Bernd Krauskopf of the University of Bristol whose work with colleague Dr Hinke Osinga on the famous Lorenz equations is dramatically illustrated by Dr Osinga's crocheted 'Lorenz manifold' (pictured). The crochet instructions were generated by their special computer programme to study the nature of chaotic systems. The complicated geometry of the Lorenz manifold is directly related to the so-called Butterfly Effect, where small changes in initial conditions can produce vastly different results. **www**

A very short introduction ...



... to the World Trade Organization (WTO). Though scarcely ten years old, even in these early years of its existence it has generated debate, controversy and even outrage. This recent book from Nuffield Fellow, Dr Amrita Narlikar provides a timely and carefully considered explanation of what the WTO is, what it does, and how it goes about executing its tasks. Essential information to appreciate the controversy behind the organization is clearly much in

demand – the book has already gone to a second edition.

Dr Narlikar is one of the current holders of a Nuffield social science New Career Development Fellowship, designed to foster the development of new social science research capacity. Based at the Centre of International Studies, Cambridge, she is working with Dr Andrew Hurrell, Department of International Relations, Oxford on an exploration of the foreign policy and negotiating strategies which developing countries pursue within a range of international institutions and regimes. [www](#)



www.telescope.org

FROM THE ARCHIVE

FREE ACCESS TO THE STARS

The Nuffield Foundation was one of the funders of the original Bradford Robotic Telescope. Sited in the Yorkshire Pennines, it proved that it was possible to accept observing requests from professional astronomers via a web site and take the necessary pictures using a robotic telescope.

It was successful, despite the infamous British weather, until destroyed by a lightning strike in 1998. In 2001 a new design team took on the task of rebuilding the Telescope on Tenerife.

Today in addition to supporting research, the new telescope has been designed as a **completely free robotic system to support the understanding of astronomy by non-professionals**. The web site is available for anyone to open an account, use the telescope and take advantage of its supporting education programmes. [www](#)

Education now

What counts as an educated 19 year old today? This is one of the key questions addressed by the Nuffield Review of 14-19 Education and Training in its second Annual Report.

Despite much policy 'busyness', participation rates amongst 16-19 year olds have not increased for a decade. The Report, published in November 2005, criticises uncoordinated policy initiatives and a failure to see reforms in a holistic manner

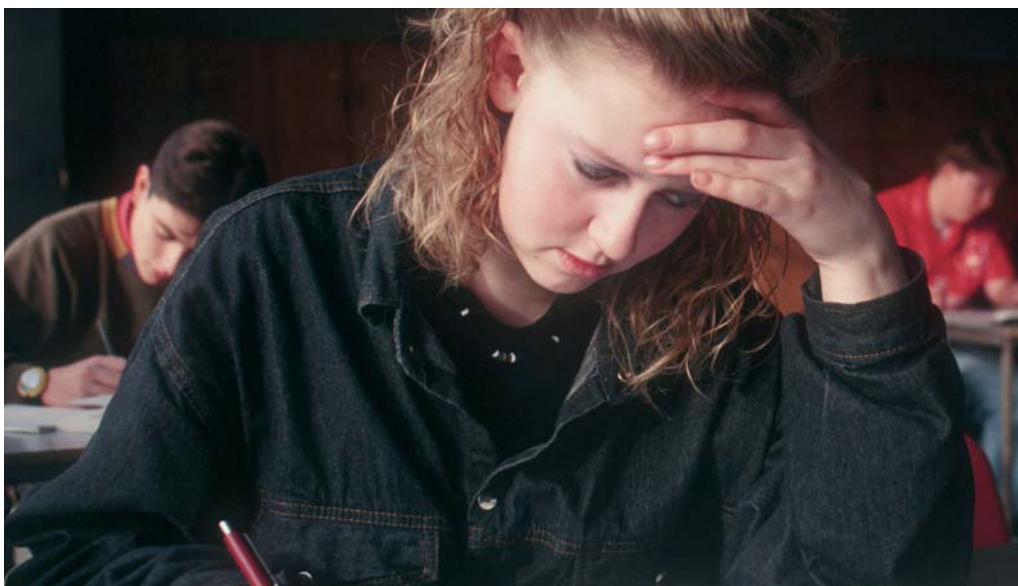
"The demands of continual assessment and 'high-stakes testing' have restricted what counts as worthwhile learning."

The Review finds that the experiences of 14-19 year olds are becoming polarised, reflecting wider social inequalities. Colleges are being left to meet the needs of lower attaining students with significantly less funding than the more selective school sixth forms. Participation and achievement in vocational learning remain particularly weak compared to other European countries.

Listening to the learner's voice

The Report proposes that more attention should be paid to involving learners in decisions and ensuring more practical and experiential modes of understanding. It argues for strongly collaborative 14-19 local learning systems and notes the need for changes to employment practices and the youth labour market.

Future work will continue the monitoring of 14-19 policy, drawing also on international comparisons. The Review will look at ways in which schools, colleges and work-based training providers prepare young people for higher education and the labour market, with a particular focus on groups of disadvantaged young people. It will share its analysis and findings with a wider audience of key stakeholders through regional seminars, producing its third annual report in November 2006. [www](#)



www.johnbirdscall.co.uk



A pensions solution?

Through its *Older People and their Families* programme the Foundation is funding work by the Pensions Policy Institute, an independent think-tank, to model long-term policy reform options in the UK pension system.

With the help of the Foundation the PPI has also been running a programme of seminars on pensions policy. Under the title, *Shaping a stable pensions solution*, the aim is to build a picture of a consensus pension solution that could work for the long-term, through a series of papers and seminars to debate the most critical pension issues on the interaction of state and private pensions.

There have been five seminars to date, each examining a critical and topical pensions policy question; such as the balance between state and private pensions, effects on incentives to work and save and the role of means-testing in state pensions. The reports of these seminars are available on the PPI website.

With the publication of the Turner report in November the debate on Britain's pensions system has entered a new and critical phase. The PPI will be producing a final report in the Spring summarising the conclusions of the seminars and reflecting on how they compare with the Turner proposals. [www](http://www.ppi.org.uk)

RESEARCH COSTS

With the introduction of new methodology for costing in research projects in universities, the Foundation's rules on allowable costs have changed – see our website for details

FELLOWSHIPS

The Nuffield Foundation is funding five new international research fellowships on the Children of Immigrants in Schools, starting in 2006.

Supporting women students

Relatively small sums of money can make a big difference to women trying to complete courses of further education. The Elizabeth Nuffield Educational Fund is aiming to target some of those whose needs are not met through existing learning support and other funds.

Five colleges of further education are each to be awarded £25,000 by the Elizabeth Nuffield Educational Fund to take part in a pilot project. A Discretionary Fund will be established in each of the colleges and grants of up to £1,000 will be given, following common criteria, to women studying at Level 3 (A level or its equivalent) who find themselves in unanticipated financial need. The purpose of the pilot is twofold: to help women complete their courses successfully, and to identify the type of unexpected problems that may prevent them from doing so. [www](http://www.nuffieldfoundation.org)

The participating colleges are: College of North East London (CONEL); Lambeth College; Newham College of Further Education; South Thames College and Tower Hamlets College. The pilot will run until the summer of 2006.



Risk and return

How does a trustee settle on an acceptable balance between risk and return? This was a key question in a recent seminar on governance, the third in the Nuffield Foundation's independent seminars about investing charitable assets.

Trustees are increasingly aware of their obligations under the Trustee Act which implies a cautious brief yet also a need to maximise investment returns. The charities present discussed how they had addressed this contradiction and the processes they used to arrive at a reasonable balance of risk and reward. A report of the seminars can be found on the Foundation's website. [www](http://www.nuffieldfoundation.org)

BIOETHICS

In January, the Nuffield Council on Bioethics established a new Working Party with a brief to consider the ethical issues surrounding public health. Chaired by Professor Sir John Krebs, former head of the Food Standards Agency, the group will focus on the difficulties of balancing individual choice and community benefit using case studies, such as smoking, obesity and vaccinations. Their report is expected in autumn 2007.



William Morris, Lord Nuffield
1877-1963

The Nuffield Foundation is an endowed charitable trust established in 1943 by William Morris (Lord Nuffield) the founder of Morris Motors with the aim of advancing social well being. We fund research and practical experiment and the development of capacity to undertake them, working across education, science, social science and social policy. While most of the Foundation's expenditure is on responsive grant programmes we also undertake our own initiatives.

Full information on all our current activities and on how to apply for grants can be found at www.nuffieldfoundation.org

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