MAKING THE CASE
FOR THE SOCIAL SCIENCES

No.12 EDUCATION
Foreword

The recent Research Excellence Framework (REF) confirmed earlier clear signals (BIS, 2011; QS, 2014) about the high quality and impact of UK educational research. REF 2014 showed 66% of educational research to be in the top categories of ‘world leading’ and ‘internationally excellent’. As a field, educational research is large and vibrant, and is particularly successful at developing future research capacity with a high level of Doctoral completions. The British Educational Research Association (BERA) now has the highest number of members in its 42-year history and UK-based educational research continues to hold a prominent position on the international stage.

It is not difficult to see why we need excellent educational research. One only has to look at the sheer scale and breadth of educational activity in schools, colleges, universities and training contexts. Then there is the enormous investment of money, time and energy on the part of governments, organisations and individuals. Add to this the power of education to shape the capacities, world-views, ambitions, prospects and values of so many younger and older citizens (and therefore the culture, society and economy), and the case becomes compelling.

Educational research generates insight, evidence and analysis that can be used to improve policy and practice for greater efficiency and effectiveness.

At the same time it is a source of new understandings, new ideas, new approaches and robust, independent constructive criticism. Together, these are at the core of its contribution to the health of a democratic society.
Educational research faces similar challenges to other social sciences in a time of relative austerity, and Britain’s prominent place in European research projects is likely to become more difficult to sustain following the outcome of the referendum on EU membership. Despite these uncertainties, a strong track record and high potential for impact are good grounds for optimism when looking to the future.

As even the small ‘taster selection’ of examples contained in this booklet shows, educational research encompasses a wide range of concerns, from the most detailed learning situation through to global issues. It has its own identity, whilst also drawing in other disciplines both within and beyond the social sciences.

Educational research matters. These examples demonstrate why.

This issue has been made possible through the kind support provided by the British Educational Research Association, the Scottish Educational Research Association and the publisher Routledge, Taylor & Francis.
Some children appear to be very fluent word readers but struggle to understand what they are reading.

This is because reading comprehension is much more than just recognising words. It involves (among other skills) the ability to make inferences to connect up the text and to appreciate text and story structures.

Professor Jane Oakhill of the University of Sussex had noticed this discrepancy between word reading and reading comprehension whilst working as a primary school teacher and, with Professor Kate Cain, now at Lancaster University, set out to unpick the skills and abilities that are fundamental to successful comprehension. They found four skills that are fundamental to children’s reading comprehension:

• Vocabulary – depth, richness and links between word meanings and concepts.
• Inference making – connecting ideas in a text and bringing in relevant background knowledge.
• Comprehension monitoring – recognising if you are understanding and knowing what to do about it if you’re not.
• Understanding how text is structured and using that structure as a framework for understanding.

The researchers showed that successful teaching of reading comprehension is about knowing how to engage children in any text to support their understanding.

When the National Curriculum started mandating the teaching of reading comprehension, it was clear that something was needed to help teachers teach comprehension. Professors Oakhill and Cain then developed activities for teachers to help them gain insights into what’s involved in their own comprehension and so understand better how to teach reading comprehension.
Their findings have directly influenced England’s National Curriculum, English Programmes of Study, Key stages 1 and 2. They have also influenced the standardised assessment of reading comprehension used in the UK and South America, helping to better identify children in need of additional help. The work has also informed the training of teachers in the UK, North America and Argentina.

The research has had a positive effect on children beyond reading. In Argentina, where many schools are using a programme based on the findings, children said, ‘This is so useful, why don’t we use it in all our lessons?’ and, ‘It’s not just for our reading, it can help in our whole life.’
Improving struggling schools

The Office for Standards in Education (Ofsted) is a key mechanism for the government to ensure that its funding is well spent so that the nation’s children have equal access to the high quality of education they are entitled to. Education is also a key vehicle via which recent governments have sought to realise their aspirations for social mobility; this has precipitated sustained attention to narrowing the socio-economic gap in educational attainment. Professor Becky Francis FAcSS, then Director of Education at the RSA, initiated a piece of research, working in collaboration with Ofsted, to investigate the issue of school quality in relation to pupil social background.

Professor Francis and her team noticed that, although there was plenty of advice on how to take a school from ‘Good to Great’, and to turn around failing schools, little attention was paid to the large proportion of schools classified by Ofsted as ‘Satisfactory’.
So they set out to map schools which had been graded successively as ‘Satisfactory’ overall and as having only ‘Satisfactory capacity to improve’ in terms of both their location and their demographic.

They also analysed the relationship between socio-economic background and attendance at such schools and considered where problems seemed to lie and what might be done to help.

They found that a significant number of schools – some 16% – seemed to become stuck at ‘Satisfactory’ and that young people from disadvantaged backgrounds were over-represented in these more poorly performing schools. They also found that such schools were much less likely to improve than those graded ‘Good’ and that inconsistent teaching practice was a clear common characteristic.

The researchers recommended changing the grade title ‘Satisfactory’ to one that better indicated the need for improvement, and to increase inspections for those schools not improving from this grade so that such schools could be more strongly and clearly incentivised and supported towards improving. They also suggested ways in which teaching could be improved. When the report was published Professor Francis was invited to a roundtable at No.10 on ‘coasting’ schools chaired by the then Prime Minister David Cameron, and also spoke at the RSA on a panel with Sir Michael Wilshaw, then Her Majesty’s Chief Inspector.

As a result of this work Ofsted changed its designation category of ‘Satisfactory’ to ‘Requires Improvement’, to increase inspection for those schools not moving out of this category and to focus policy attention on the over-representation of working class pupils in poorer quality schools.
It has long been known that there is a big gap between the proportion of students from poorer and better-off backgrounds going on to Higher Education, especially to high-status universities and Professor Anna Vignoles, now of the University of Cambridge and then at the UCL Institute of Education in London, led research to find out why.

The researchers created a new ‘linked’ administrative data set for England, consisting of records from the Department for Education and the Higher Education Statistics Agency. Through this they were able to follow two entire cohorts of students who had taken their GCSEs in 2002 and 2003, from age 11 until they were 20.

This research documented the persistent gaps in Higher Education participation rates by socio-economic background, despite the many policy efforts to widen Higher Education participation.

The researchers found that the main reason for low numbers of poorer pupils progressing to university was that they tend to do less well at A-Level and so find it harder to move on to Higher Education.

As a result they showed clearly that intervention to widen participation needs to come far earlier in schooling than at the point when students apply to university. Further, once at university, poor students are also more likely to drop out than students from wealthier backgrounds. This suggests that students from poor backgrounds are less well-prepared for university and that those who do enrol may need additional support during their Higher Education.
This work has strongly influenced Higher Education and social mobility policy and Alan Milburn, Chair of the Social Mobility Commission, acknowledged its influence on his work with UCAS and universities.

The government recognised the importance of early advice and guidance in the 2011 Higher Education White Paper and, following its publication, Professor Vignoles and Dr Claire Crawford, a co-author of the research, were invited to a meeting with the Rt Hon the Lord Willetts FAcSS, then Minister of State for Universities and Science, to discuss Higher Education and social mobility. They were then asked to produce a review which fed into the Cabinet Office report on this issue. It also led directly to the creation of the website bestcourse4me.com, providing independent, free, data-based information to A-Level students about degree and institution choices.

www.bestcourse4me.com
Scotland had long been aware that, like other countries, there was a gap between how well pupils from high-income and low-income backgrounds did in education.

For instance, by the age of just 5, poorer pupils already lag behind their richer contemporaries by about a year in terms of learning, and this gap is larger than for many similar countries.

**Professor Sue Ellis** and **Dr Edward Sosu** of Strathclyde University looked at the reasons for this and what could be done about it. They knew that in Scotland parental socio-economic background has more influence on attainment than the school attended, and that children from deprived households leave school earlier with fewer qualifications, with consequent long-term effects on job prospects. Their report brought together a range of evidence-based sources on how to reduce the attainment gap in ways that recognised the constraints of Scotland’s policy context.

They carried out a systematic review of international ‘what works’ evidence, a careful analysis of how Scottish policy documents profiled attainment, poverty and social class issues, and they analysed previous Scottish interventions to identify those with an evidence-base and find out what had worked, on whom, in which circumstances, why and how.

They used these different kinds of analyses to identify the key policy and practice barriers in the Scottish system as well as the potential levers for change. The report profiled the issues but also recommended specific actions for national, local, school, professional, parental and community bodies.
This work led to the Scottish government setting up a £100m Attainment Fund for schools and amending the Education (Scotland) Bill by requiring Local Authorities to report on the extent of the poverty-related attainment gap and efforts to reduce it.

It was heavily referenced in parliamentary debates and policy papers and has led to the involvement of Dr Sosu and Professor Ellis in an extensive range of working parties, public engagements and media coverage including the BBC and STV. The work is carrying on through a Scottish Funding Council funded project looking at how to widen access in Higher Education.

By law, children in England do not have to be in school until the term after their fifth birthday, but the vast majority start much earlier than this, with over 90% starting school in the September after they turn four. For those born in August, this means starting school when they have only just turned four, up to a year younger than their peers. Professor Lorraine Dearden FAcSS of University College London and colleagues at the Institute for Fiscal Studies – Dr Claire Crawford of the University of Warwick and Ellen Greaves of the University of Bristol – looked into whether it matters when in the school year a child was born.

They found that being amongst the youngest in the class can have significant implications for many aspects of children’s lives.
As a result, in 2015 the government changed legislation so that parents of summer-born children now have more flexibility in choosing when their child starts school.

However this could also mean that the gap in age between the youngest and oldest in the year will further widen. As a result the researchers are actively engaging with policymakers about how best to deal with the problem – for example, introducing ‘age-adjusted’ test scores for all children which tell us about a child’s progress relative to others of the same age.

www.ifs.org.uk/publications/6686

For example, those born in August are, on average, around 25% less likely than their September-born classmates to reach the government’s expected level in reading, writing and maths at age seven. They also tend to have lower confidence in their ability and are more likely to be labelled as having mild special educational needs.

Summer-born children do tend to catch up with their autumn-born peers as they get older, but there are still differences in attainment at GCSE, A-Level and even university. For example, while 60% of those born in September achieve 5 A*-C grades in their GCSEs, only 54% of those born in August do the same.

These types of statistics understandably lead parents of summer-born children to be concerned about how their child will fare at school. It is important to remember that these figures are averages: every child is different, and there are many summer-borns who flourish and autumn-borns who struggle. But it is concerning that something as arbitrary as the cut-off date for school entry has the potential to affect individuals throughout their lives.
Following the London bombings in 2005 there was much debate about how some British born citizens were so alienated from society that they carried out acts of terrorism. The Department for Education and Skills wanted to know more about how citizenship was being taught in schools and how understandings about Britain as a diverse society were being developed as part of the National Curriculum, and commissioned Professor Uvanney Maylor, now at the University of Bedfordshire, and Professor Alistair Ross FAcSS and colleagues at London Metropolitan University to investigate these issues. The researchers looked at how diversity was promoted across the curriculum and how the National Curriculum addressed contemporary British identities and values. They looked at the available research, including European studies. They also looked closely at six very different schools in England, where they talked with the leading staff and held focus groups of pupils, whilst also observing what was going on in lessons and assemblies and at the relevant schemes of work and policies.

They found that the existing curriculum did not promote understanding of the plurality of groups in Britain and that many teachers avoided teaching about diversity, or failed to explore diversities within ethnic categories. They also found that a very narrow view of Britishness was being taught within schools. They identified ways in which successful teaching about diversity could be embedded within schools and their work fed into the Ajegbo Commission’s 2007 report Curriculum Review: Diversity and Citizenship. The Review’s findings were accepted by the Secretary of State, and the Qualifications and Curriculum Authority (QCA) subsequently revised the National Curriculum so that pupils have received this education since 2008. Supporting resources were also developed and the Professional Standards for Teachers were revised to incorporate a set of professional attributes.
concerning diversity and the requirement that teachers take practical account of diversity and promoting equality and inclusion; the 2012 revision also referred to this research.

The University of Exeter said that “the fact that this area was now statutory was significant - it ensured that we explored these important issues of race and diversity. This was particularly important in the South West where there is still a tendency for schools to think ‘there is no problem here’".

In their grading of schools, Ofsted inspectors now include an assessment about the extent to which children have understanding of other people and different cultures (i.e. people who are different to themselves) in order to be graded outstanding, as exemplified in a nursery school which had its Ofsted rating downgraded from outstanding to good.

www.gov.uk/government/publications/teachers-standards
How parents can support their child’s learning in a digital world

Recent research by Ofcom shows that more than half (53%) of 3 and 4-year-old children have access to tablets at home. However, a number of myths have emerged about children's use of digital media and some parents have become concerned about screen time, despite research showing that technology can aid learning and creativity, particularly when parents are actively involved in their children’s play.

In 2014 the BBC asked Professor Lydia Plowman FAcSS and Juliet Hancock of the University of Edinburgh to consider how CBeebies games on the website and apps could become springboards to further learning. The researchers reviewed over 80 CBeebies games to assess their educational value, areas of learning and development, and overall enjoyment.

They then devised guidance for parents so that they could engage with their children in shared activities both digitally and around the home.
For each CBeebies game, these guided interaction points identified areas of learning and development, such as numbers or the ability to concentrate, along with a complementary activity and a simple description of how learning could be extended. For example, if the digital game featured matching and sorting, the related parent and child activity might involve matching socks while sorting the laundry.

This gave CBeebies games an enhanced focus on children’s learning and development, and helped parents share young children’s screen time and participate in their digital games.

As many children were likely to receive handheld devices for Christmas 2014, the researchers were featured on BBC iWonder, its digital encyclopaedia. This provides thought-provoking answers to everyday questions, such as ‘Are tablets good for children?’

As a result of this work, the BBC also included guided interaction points on their Storytime app and in 2016, commissioned suggestions for a further 16 games on the CBeebies site. One parent said,

“It’s important to play along with your child as they get more out of it. You can explain things to them if necessary. Otherwise they can concentrate too much on the process of playing the game rather than what they’re learning. Or your child can miss things... but as a parent you can pause and point things out.”

Parent of Sam aged 4

www.bbc.co.uk/mediacentre/latestnews/2014/cbeebies-storytime-app
Improving young children’s attitudes towards cultural diversity

Sectarian attitudes are a long-established feature of the divided communities in Northern Ireland. Professor Paul Connolly and colleagues at Queen’s University Belfast set out to discover at what age children first pick up such negative attitudes and what can be done about it. They undertook innovative baseline research, including a survey of 350 children aged 3-6 selected randomly from across the region, as well as in-depth qualitative case studies of young children’s social worlds.
The researchers found that children as young as three years old held sectarian attitudes, but that the situation was not hopeless and that early education programmes had the potential to make a positive difference.

Working in partnership with ‘Early Years – the organisation for young children’ in Northern Ireland and the US-based Peace Initiatives Institute, a major new programme was developed and piloted for 3-4 year olds called the Media Initiative for Children: Respecting Difference Programme. Using robust evaluation methods, the research team were able to demonstrate that it had a positive and measurable impact on young children’s attitudes and awareness.

Over the last 10 years, and with the evidence of these evaluations, the programme has been rolled out to all pre-school settings in Northern Ireland and many in the Republic of Ireland. The programme is also being expanded for 2-year olds and also older children in primary schools at Key Stage One.

This body of research also helped attract funding and agreement with the BBC to produce two locally-made television series of Sesame Tree – the Northern Ireland version of the popular US children’s programme Sesame Street that is now broadcast across the UK on CBeebies.

More widely still, the team are now beginning to work with external partners to support the development of similar early education programmes in other conflict-affected societies, including Colombia, Serbia and Israel.
In October 2006, a team led by Professor Robin Alexander FAcSS of the University of Cambridge launched the most comprehensive enquiry into English primary education since the 1960s. Funded by the Esmée Fairbairn Foundation and supported by public and professional opinion canvassed over the previous two years, the Cambridge Primary Review spoke to widespread concern that social change and accelerating yet piecemeal educational reform had left the sector confused as to its purposes, insufficiently informed by evidence and in a state of acute policy overload.

Combining the rigour of a research programme with the openness of a public enquiry, the Review collected a vast array of evidence about primary education’s condition and future.

Between 2007 and 2009 it published 31 interim reports and 40 briefings on matters as diverse as aims, curriculum, pedagogy, assessment, quality assurance, school organisation, leadership, teacher training,
This not for profit organisation is committed to building on the Review’s work through fresh research, teacher development, policy engagement and the activities of 13 regional networks. It seeks to universalise a primary education that provides the richest possible foundation for the learning and lives of all the nation’s children, especially those who are vulnerable or disadvantaged.

www.cprtrust.org.uk
Does ‘learning still equal earning’ in the global knowledge economy?

It has been generally assumed that, in developed economies like the UK, an increasing demand for highly skilled workers would remain central to competitive advantage and to securing economic position in world terms. This ‘human capital’ view has been the driving force behind a great deal of economic and educational policy.

In a unique series of linked research projects running from the late 1990s to the present, Professor Phillip Brown FAcSS of Cardiff University and Professor Hugh Lauder FAcSS of the University of Bath, are examining the role of transnational companies and the skills strategies of emerging economies in reshaping the global economy. They are also investigating the implications of these trends for higher education, talent management, high-skilled work, and national skills formation policies, across several major countries.

They found that the widespread ‘human capital’ view greatly underestimates the nature and extent of the engagement of emerging economies with high-skilled work. The competitive advantage associated with a highly skilled workforce is declining, due to a rapid doubling in the global supply of college and university-educated labour, especially in China.

They also found that the very nature of knowledge work is itself changing, aided by new technologies. Their research shows how companies at the turn of the twenty-first century started experimenting with new innovative approaches to job design in knowledge-intensive industries. Rather than rely on an expanding proportion of knowledge workers doing the thinking for the organisation, companies are using new technologies to capture areas of technical, professional and managerial knowledge in the form of algorithms and digital software. Because this echoes industrial-era changes to work, like those described and advocated in the early twentieth century by Frederick Winslow Taylor, Brown and Lauder call this process Digital Taylorism.
This work helps us understand why and how ‘graduate jobs’ are changing, and it challenges simple concepts of career progression based on merit. It offers unparalleled insights based on over 500 face-to-face corporate and policy interviews, with far-reaching implications for economic, education and skills policy. The researchers have worked with UK government Select Committees, with a UK Commission for Employment and Skills, as well as through articles in the national press and contributions to reports with wide circulation in Westminster. Further afield, the research has contributed directly to deliberations and policy formation in the World Bank, International Labour Office, the World Universities Forum, the Singapore government, and several European Union organisations. The Global Auction, a key book from the research, has been translated into Chinese and Korean.
Learning is rarely a simple, linear process and rather than it proving a straightforward moment of enlightenment – the proverbial ‘lightbulb moment’ or ‘penny dropping’ – is usually a more protracted and troublesome affair.

Professor Ray Land and Professor Erik Meyer of Durham University were part of a team investigating how to improve undergraduate teaching and learning environments. They explored further their finding that economists held mastery...
of certain concepts to be vital for the understanding of their subject, and progress within it.

In each case the integration of an important new perspective, such as ‘opportunity cost’, required the (usually challenging) letting go of an earlier prevailing view. Successful integration led to a transformed perspective, adoption of a new discourse and often a change in the learner’s outlook and even understanding of themselves. What emerged were new ways of thinking and practising.

This was akin to passing through a portal into a changed landscape, where previously inaccessible perspectives came into view.

Subsequently it emerged that such concepts existed in many other disciplines, such as ‘stress transformation’ in Engineering, ‘gravity’ and ‘measurement uncertainty’ in Physics, ‘deconstruction’ in English Literature, and ‘geologic time’ in Geology.

Such conceptual change was often triggered by an encounter with ‘troublesome knowledge’, a stepping into the unknown, and frequently involved a challenging phase of transformation towards understanding, with associated and strong emotional responses.

The researchers helped teachers to understand why learners typically find the path to learning a difficult one and how to improve their teaching by examining their practice from a student’s perspective and to make appropriate interventions. The concept has been picked up widely. The approach has been strongly promoted as a key pedagogical tool within and beyond the UK, for example by the Higher Education Academy and JISC, as well as the American Libraries Association and Norway’s TransARK architectural project. Within industry, firms such as Nokia, Atos and Virtech have used the concept in designing ‘serious games’ for staff training as part of a €9.4m EU collaborative project.

www.ee.ucl.ac.uk/~mflanaga/thresholds.html
Contemporary society requires more and more people with a higher level of science education, yet an enduring problem for the sciences has been the poor image that the subject has amongst young people. Too often it is taught in a way that requires students to memorise an ever-expanding body of ‘final form’ knowledge. As a result, many students ‘leak’ from the STEM pipeline and are lost to science.

Initial work suggested that too much emphasis is put on details rather than the grand ideas. In addition, it is not enough to present simply what we know, and school science needs to address how we know what we know and how it came to be. The Evidence-Based Practice in Science Education project – an ESRC-funded collaboration between King’s College London and the Universities of York and Southampton – conducted a Delphi study of scientists, science educators, science teachers, philosophers and sociologists to identify what aspects of the nature of science should be taught to all students. It identified 8 key features including the range of scientific methods, the analysis and interpretation of data, and the limits to certainty in science.

Alongside this work, Professor Jonathan Osborne and Dr Shirley Simon at King’s College London have been funded by the ESRC to train teachers to use a pedagogic approach which enables their students to engage in argumentation. They evaluated this work and found that both teachers and students improved the quality of their scientific argumentation. This work laid the foundations for a programme of research that has influenced the teaching of science across the globe. Being able to identify what evidence does and does not support a scientific claim is now a competency tested by the OECD PISA test of scientific literacy used to evaluate the performance of 15-year-old students in 72 countries every 3 years, and engaging in argument from evidence is now a core feature of the US curriculum.

www.nuffieldfoundation.org/twenty-first-century-science/rationale
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