BERA
BRITISH EDUCATIONAL RESEARCH ASSOCIATION

August 2013

WHY EDUCATIONAL RESEARCH MATTERS

A BRIEFING TO INFORM FUTURE FUNDING DECISIONS

British Educational Research Association (BERA)

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About BERA

The British Educational Research Association (BERA) is a member-led charity which exists to encourage educational research and its application for the improvement of practice and public benefit.

We strive to ensure the best quality evidence from educational research informs policy makers, practitioners and the general public and contributes to economic prosperity, cultural understanding, social cohesion and personal flourishing.

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WHY EDUCATIONAL RESEARCH MATTERS

A BRIEFING TO INFORM FUTURE FUNDING DECISIONS

EDUCATIONAL RESEARCH: A VITAL CONTRIBUTION

In the current economic climate, we recognise the difficult decisions the Government needs to make in order to reduce the structural deficit while achieving the best possible value for taxpayer's money. Consequently, we accept that spending decisions need to consider the optimum benefits – economic and social – to society. Spending decisions about educational research are no exception. This inevitably raises questions on the contribution of educational research to society. Put another way: does educational research matter? (Mortimore, 1999)[1]

We believe it does. We consider this contribution through this paper and a series of case studies with the aim of establishing educational research as a priority.

HEADLINE MESSAGES

- Educational research makes a vital contribution to practice and policy in education and to wider society.
- Educational research is necessary for the advancement of knowledge for education and of education.
- Educational research supports the UK in developing the knowledge economy and facing other future challenges.
- Reduced investment in educational research would result in a void in the development and progression of education in the UK.

[1] Mortimore, P. (1999) Does Educational Research Matter? Presidential address to the British Educational Research Association.

WHAT IS EDUCATIONAL RESEARCH?

There is a wide scope and breadth of educational research carried out by university-based researchers in the UK, bringing original investigation to bear on a range of issues, from studies of children in formal schooling, to studies on informal education; and from pre-school through to adult education. It covers themes from the organisation and structure of education, to those on social justice, special education needs, curriculum, assessment, innovation and the economic impacts of education (Gardner, 2011)[2]. It focuses on people and on the places in which they learn, such as classrooms, playgrounds, homes and libraries (Mortimore, 1999)[3].

The range alone provides an indication of how education impacts on everyone and how a strong research discipline can ensure that individual lives and communities are transformed through education.

The educational research community represents people from diverse backgrounds (for example, former teachers and vocational education trainers) and disciplines (such as the social sciences and humanities, the natural sciences, and newer disciplines like information science). The community has varied theoretical orientations and employs different methodological approaches (Gardner, 2011)[4]. It is self-reflective and self-critical, driving quality from within to ensure research that is fit for purpose (James, 2012)[5].

The sector is also supported in its quality aims by the Research Excellence Framework (REF), a peer review exercise to evaluate the quality of research in UK Higher Education Institutes (HEIs), and Quality Related (QR) funding, both managed by the Higher Education Funding Council for England (HEFCE). As well as supporting high quality research by engaging with researchers and establishing a discourse on quality, REF and QR work towards cost-effective research practices by addressing the relationship between research inputs (including financial) and outcomes. Submissions to the 2008 Research Assessment Exercise (the previous name for REF) also provide insight into the numbers of educational researchers involved in research: 1,696 academic staff entered, which is roughly equivalent to those in psychology and twice the size of either economics or sociology.

Educational researchers generally work in the sector because of their commitment to inform the direction of education and to make a positive impact on learning, individual learners and society in general (Reiss et al, 2010; Francis, 2012)[6]. The sector's experience, expertise and scope of activities allow it to achieve this and to make a real difference to the quality of education in the UK.

Moreover, those working in educational research are well positioned to act as an independent and impartial voice in the production of educational knowledge and understanding. Through their research they are able to challenge, question and evaluate existing policy and practice. As a result, they play a vital role in UK society by asking difficult questions, demanding evidence for answers, generating new knowledge, formulating new theories and speaking up for what they believes is right. Mortimore (1999)[7] argues that a democratic society should expect no less from a research discipline.

Educational research also works with a diverse audience including "policy makers, influencers and implementers in national, regional and local government bodies….education sector professionals and practitioners, funding bodies…[and] the general public" (Gardner,

[2] Gardner, J. (2011). Educational research: what (a) to do about impact! *British Educational Research Journal*, Vol. 37, No.4, August 2011, pp. 543-561. [3] Mortimore, P. (1999) *ibid.* [4] Gardner, J. (2011) *ibid.* [5] James, M . (2012) Growing confidence in educational research: threats and opportunities. *British Educational Research Journal*, Vol. 38, No. 2, April 2012, pp. 181-201. [6] Reiss, M., Tough, S. & Whitty, G. (2010) Measuring impact in education research. *Research Intelligence*, Spring 2010, Issue 110, pp. 14-19. Francis, B. (2010) Impact in education – or not? A challenge for BERA. *Research Intelligence*, Summer 2010, Issue 111, pp. 25-26. [7] Mortimore, P (1999) *ibid.*

2011: 547)[8]. Continued engagement with all these stakeholders establishes a shared understanding of quality, value and impact in educational research, ensuring that educational research is judged by the right criteria (Whitty, 2006; Delamont, 2010)[9]. BERA is committed to achieving this goal to the benefit of all stakeholders.

In view of this, BERA advocates a broader consideration of educational research that includes research of education – 'blue skies' research to support the development of educational theories and phenomena – as well as *for* education – a focus on 'what works' and a conscious contribution to evidence-informed policy and practice (Whitty, 2006; James, 2012)[10]. Educational research should be recognised for its unique ability to offer both perspectives as it questions assumptions, discards old myths, considers whether activities and policies are worthwhile, sets agendas and re-conceptualises problems (Weiss, 1991; Whitty, 2006)[11].

To support the reach of educational research, funding sources are varied and cross-sectoral. This includes investment from Government departments, for example the Department for Education (DfE), and the Department for Business Innovation and Skills (BIS). Educational research also attracts funding from HEFCE (and equivalent bodies in the devolved nations). The UK also benefits from research funds from the seven bodies comprising Research Councils UK (RCUK), from the European Union, charitable organisations, the private sector and international bodies such as UNESCO (the United Nations Educational, Scientific and Cultural Organisation) and the OECD (Organisation for Economic Co-operation and Development).

THE CONTEXT FOR EDUCATIONAL RESEARCH: THE KNOWLEDGE ECONOMY AND FUTURE CHALLENGES

The scope and breadth of educational research is located in an ever-changing UK and global economy faced with multiple challenges. As well as responding to changes, UK educational research, together with other research disciplines, is influential in advancing change to ensure economic growth, and to maintain the UK's position as a world leader in education, science, technology, skills and innovation.

Over the past 30 years, the UK's economy has been driven by a move towards a knowledge-based economy. A 2011 report by the Work Foundation showed that between 1989 and 2006 the value of the UK's knowledge-based service exports grew from less than £13 billion to just under £90 billion. This shift was also reflected in the UK job market, with over 7 million net new jobs created in the UK[12].

In the same period, other OECD countries have also experienced similar shifts to a knowledge economy. The commitment to support this shift has been reflected in sustained investment in Higher Education (HE), science, research and development. For example, the US, Canada, Germany and France have continued substantial investment in these areas during the current global recession[13].

Similarly, the need for sustained investment in these areas to advance the knowledge economy is imperative for future economic growth and prosperity in the UK. In the 2010 Spending Review, the Government reaffirmed its commitment to invest in science and research by maintaining the science budget in real terms (£4.6 billion of resource spending) over the Spending Review period[14]. As the Chancellor

[8] Gardner, J. (2011) *ibid.* [9] Whitty, G. (2006). Education (al) research and educational policy making: is conflict inevitable? *British Educational Research Journal*, Vol. 32, No. 2, April 2006, pp.159-176. Delamont, S. (2010). Impact: A personal view. *Research Intelligence*, Spring 2010, Issue 110, p.11. [10] Whitty, G. (2006) *ibid.* James, M. (2012) *ibid.* [11] Weiss, C. H. (1991) Policy research: data, ideas or arguments? in Wagner, P., Weiss, C., Wittrock, B. & Wollmann, H. (Eds) *Social sciences and modern states: national experiences and theoretical crossroads.* Cambridge: Cambridge University Press. Whitty, G. (2006) *ibid.* [12] Levy, C., Sissons, A. & Holloway, C. (2011) *A plan for growth in the knowledge economy.* The Work Foundation. [13] Levy et al. (2011) *ibid.* [14] HM Treasury (2010) Spending Review 2010.

argued in the 2013 Spending Review, "scientific discovery is first and foremost an expression of the relentless human search to know more about our world, but it's also an enormous strength for a modern economy."[15]

As well as the contribution made by science research and STEM (Science, Technology, Engineering and Maths) research more broadly, several reports have drawn attention to the need for the UK to build a wide research, skills and knowledge base, encompassing diverse disciplines, to support the knowledge economy and to respond to other future challenges[16]. These challenges include globalisation, talent and social mobility, an ageing population, an increasingly diverse population, family life and communities, crime and public safety, and climate change[17]. Many of these areas are relevant to the social sciences, including educational research[18].

Over the past 20 years, the establishment of Government initiatives for educational research has developed a sector able to respond to these challenges. Initiatives like the National Education Research Forum (2002 to 2006)[19], Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI) (1993 to date)[20], the British Educational Communications and Technology Agency (BECTA) (1997 to 2011)[21], the Centre for Research on the Wider Benefits of Learning (WBL) (1999 to date)[22] and the Teaching and Learning Research Programme (TLRP) (2000 to 2012)[23] are such examples. These initiatives demonstrate the need for a clear vision on the role of research to better educational outcomes. It also shows the learning, knowledge and impact for practice and policy that can be achieved when research is embedded in well-funded, sustainable frameworks and contexts. Supported by funds from varied sources, for example the DfE, BIS, HEFCE and RCUK, these initiatives developed a wide knowledge base in their respective fields.

The TLRP, for example, was a £43 million UK-wide initiative funded by the Economic and Social Research Council (ESRC), the Engineering and Physical Sciences Research Council (EPSRC), the Department for Education and Skills (now the DfE), HEFCE, the Department of Education, Northern Ireland; the Department of Employment and Learning, Northern Ireland; the Scottish Government and the Welsh Assembly. As the largest ever UK initiative in education research, it was both unique and ground-breaking.

TLRP had two key aims: to contribute to the improvement of learning outcomes in the UK and to increase the quality, capacity and quantity of educational research. The programme provided insight into teaching and learning across all education sectors, from pre-school to further education and HE through to lifelong and work-based learning[24]. The first phase of the initiative (2000 to 2009) considered generic issues, including literacy, mathematical and scientific understanding, informal learning, widening participation and work-based learning in a global economy; and a second phase (2007 to 2012) focused on technology-enhanced learning. The initiative supported over 100 research projects and in the region of 700 researchers. Research knowledge generated from the programme contributed to public debate on key educational and related issues, and to improving the professional judgements of practitioners and policy makers across the UK.

[15] Osborne, G. (2013) Statement to Parliament, 26th June 2013. [16] Levy et al. (2011) *ibid.* Cabinet Office. (2008) *Realising Britain's potential: Future Strategic Challenges for Britain.* Cabinet Office, The Strategy Unit. [17] Cabinet Office (2008) *ibid.* [18] See for example the work of The ESRC Centre on Skills, Knowledge and Organisational Performance (SKOPE) based in Oxford and Cardiff Universities. SKOPE aims to examine the links between the acquisition and use of skills and knowledge, product market strategies. Retrieved on 7 June 2013 http://www.skope.ox.ac.uk/. [19] See for example – Retrieved on 7 June 2013 http://www.eep.ac.uk/nerf/index.html. [20] See for example – retrieved on 7 June 2013: https://eppi.ioe.ac.uk/cms/Default.aspx?tabid=63. [21] See for example – retrieved on 7 June 2013: http://www.education.gov.uk/aboutdfe/armslengthbodies/a00192537/becta. [22] See for example – retrieved on 7 June 2013: http://www.ioe.ac.uk/research/168.html. [23] See for example – retrieved on 7 June 2013: http://www.tlrp.org/ [24] See for example leaflet developed by the TLRP, 'Impact and Significance' Also retrieved on 7 June 2013: http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&ved=0CDIQFjAA&url=http%3A%2F%2Fwww.tlrp.org%2Fpub%2Fdocuments%2FImpactLeaflet.pdf&ei=XNqxUYaZOuPB0QXyr4GIDA&usg=AFQjCNHz-9GyPVrT9MGk6THD7ASDe0L8Zg&sig2=N2sYP2GdCeEaHeweNu0oMg&bvm=bv.47534661,d.d2k

The cost-effectiveness of such programmes, compared to Government investment in other areas of research (such as large-scale science projects), can be considered in terms of the benefits gained to education (practice and policy) and society more broadly, relative to initial funding and costs. In addition, benefits are likely to be multi-faceted and accumulative as knowledge instigates new learning and insights. Also, while giving close attention to education, the links between educational research and broader societal, economic and global issues cannot be ignored.

'DOES EDUCATIONAL RESEARCH MATTER?': THE FLIP-SIDE

In considering the scope and breadth of educational research and its contribution to developing the knowledge economy and addressing UK challenges, the flip-side to the question 'does educational research matter' is 'would it matter if educational research no longer existed?' (Gardner, 2011)[25] If it no longer existed, how would education systems develop; how would practitioners be supported in developing their skills and knowledge; how would society gain knowledge on learning and the many factors: social, economic and environmental, that impact on learning; how would policy makers and governments be confident in their policy decisions concerning education; and how would curriculum be evaluated, re-conceptualised and improved?

These questions point to the void that would exist in the UK's desire to develop world-class educational provision across all sectors. The case studies and themes presented here demonstrate ways in which educational research makes a vital contribution to the progress of education in the UK. They show how Government investment in educational research has resulted in benefits to professional development, institutional improvement, improved learner outcomes, labour market needs, and to knowledge-informed policy making.

THE SUCCESSES OF EDUCATIONAL RESEARCH: CASE STUDY THEMES AND EXAMPLES

The case studies and themes chosen here look at research for education due to their ability to show immediate impact (an evident process of change in attitudes, thinking and approaches, even if at the early stages) and influence (stakeholders, including Government, selecting/funding educational research to evaluate what is actually happening and to use findings to do things differently).

However, as pointed out by Mortimore (1999)[26] any selection of educational research will only provide a glimpse of its varied successes. In keeping with this, the themes and case studies presented here only provide a snapshot of the many ways in which educational research impacts on individual lives, communities, curriculum, organisations, practice and professional development.

Indeed, other themes, although not expanded on here, are of no less importance. For example, the contribution of educational research to informal education, such as '*The Letter Box Club: An account of a postal club to raise the achievement of children aged 7 to 14 in foster care*' in reading, writing and mathematics[27]. Pertinent to debates and policy aimed at raising educational engagement and participation among looked-after children, the study outlines the early development of an intervention that personalises and sends school materials to children in their foster homes. The project aims to support the development and expansion of the intervention, which is already resulting in increased engagement by children with their learning.

Also, studies that locate new agendas and priorities in education are not expanded on here. However, their contribution to anticipating future issues in education, as well as changes

[25] Gardner J. (2011). *ibid.* [26] Mortimore, P. (1999) *ibid.* [27] Griffiths, R. (2012) The Letter Box Club: An account of a postal club to raise the achievement of children aged 7 to 14 in foster care. *Children and Youth Services Review* 34 (2012) pp. 1101-1106. Also retrieved on 23 May 2013 http://www.letterboxclub.org.uk/.

in the direction and focus of education in response to a changing world (characterised by the knowledge economy and globalisation) is vital. Examples of such studies include work by the University of Exeter to shed light on current practices to promote international North-South partnerships between learners and practitioners for mutual learning (particularly in primary and secondary education)[28]. The study seeks to inform how teacher education can be developed to improve teachers' understandings of 'difference' and 'similarity' in relation to other cultures and contexts. This ensures that children in the UK (and internationally) develop positive ways of talking and thinking about people and communities.

Other examples of studies include research by Kingston University to develop state-of-the art technology-based teaching methods in engineering to improve learner (undergraduate and post graduate) integration in the workplace.[29]

While presenting research *for* education, as stated earlier, it is important that the contribution of research *of* education should not be overlooked, as all the research presented here is located within educational theory. This has been developed *in* practice but also through the opportunities presented by 'blue-skies' research to provide a strong foundation in thinking *about* education.

Studies contributing to the development of educational theory and thinking include '*The Steward Street School experiment: a critical case study of possibilities*'[30]. This study demonstrates the contribution of research to initiate different ways of thinking about and approaching education to maximise effectiveness. The study examines how 'social alternatives' in education (the way society 'does' education in the context of social change) can be informed by micro-histories of schools that have successfully revised their provision to create sought-after examples of practice. Understanding such 'histories' can help to inform curriculum development, the development of learning environments, and the teaching and learning relationships between learners and educators that result in positive educational outcomes.

Finally, the case studies and themes exemplify the vital contribution made by educational research. They also show the benefits of Government investment (as well as other funding sources such as international organisations, charitable, private and UK Research Councils) in educational research to the improvement of education. All case study examples and themes continually bring us back to the question 'does educational research matter?' As suggested above, the alternative would be to consider the void that would be left by the absence of educational research.

The case studies and themes considered here are:

- Investigating learning in classrooms;
- Informing national educational initiatives and reform;
- Essential to teacher education;
- Investigating Information Communications Technology (ICT) to promote learning;
- Strengthening equal access to education for all.

INVESTIGATING LEARNING IN CLASSROOMS

Gardner (2011)[31] argues that the glue binding together educational researchers from many disciplines and backgrounds is "the pursuit of the improved understanding and facilitation of 'Learning" (p.546). By working closely with teachers, educational researchers support the development of pedagogies (approaches to teaching and learning). This can be done

[28] Martin, F. (2012) Thinking Differently About Difference. *Think Global Thinkpiece 2012 Series*. Also retrieved on 23 May http://education.exeter.ac.uk/gpml/. [29] Collier, G. (2013) *Educational Research to Develop Novel Robotic, Electronic and Control Engineering Teaching Materials Based on Industry-Standard Software and Hardware*. (Paper submitted to Faculty of Science, Engineering and Computing, Kingston University, resulting in successful funding bid). Also, a chapter related to this work, to be included in a book (anticipated date of publication April 2014) entitled: Cutting Edge Technologies and Social Media Use in Higher Education. IGI Global publications. [30] Burke, C. & Grosvenor, I. (2013) The Steward Street School experiment: a critical case study of possibilities. *British Educational Research Journal*, Vol. 39 Issue 1, February 2013, pp. 148-165. [31] Gardner, J. (2011) *ibid.*

CASE STUDY 1: CHALLENGING CHEMICAL MISCONCEPTIONS IN THE CLASSROOM

The Challenging Misconceptions in the Classroom Project (2000–2001) was funded by the Royal Society of Chemistry (RSC) to support teachers in the diagnosis of common learning difficulties by children and their misconceptions of core topics in chemistry. The project concerned secondary and sixth-form level science (11 to 16 years).

The research was motivated by previous research that showed that children often form misconceptions when learning in science (across science disciplines). These misconceptions can act as an impediment to successful learning.

The project was designed to support teachers in applying learning from research to their practice. This was achieved by providing teachers with accessible accounts and research-informed teaching materials to use in the classroom. It was assumed that most teachers did not apply learning from research to their practice. This could be for a range of reasons, for example: lack of familiarity with and access to research reports; and limited understanding on the theory behind how children learn in science.

Central to the project was the development of diagnostic tools that could be used by teachers in chemistry sessions to diagnose the difficulties children face in learning chemistry facts and knowledge. The tools were tested in UK schools by teachers who provided feedback on how they could be improved.

Resources from the project were independently evaluated by the Open University (OU).

IMPACT AND KNOWLEDGE EXCHANGE

Policy

- *Chemical Misconceptions* Volume I and II were recommended in a national (England) policy initiative as a specific text for schools in the Key Stage 3 science strategy.

Practice

The OU independent evaluation indicated:

- that the project had an impact on the knowledge and teaching behaviour of teachers, through improving their knowledge and pedagogy (strategies and approaches to teaching and learning);
- an improvement in student achievement in chemistry.

Research

- The project offered data for analysis to contribute to developing the research literature in the field.

to inform policy, in response to policy, and, perhaps most importantly, to address issues identified by teachers.

Studies on how learning is facilitated in classroom settings include those that examine how children gain knowledge and the role of teachers in supporting this. Such studies (for example case study 1: Challenging Chemical Misconceptions in the Classroom[32]) demonstrate the need to commit time as well as resources to classroom investigations. It also shows how research at the classroom level can challenge assumptions about how children learn. This can lead to the development of practice materials to support teachers in working with children and for diagnosing barriers to learning.

Current studies (for example Coultas 2012[33]) exploring the potential of classroom talk to support learning provides another example of the importance of research to practice and policy. Central to debates on what constitutes effective talk for learning and oracy (including recent debates on Government proposals to promote Standard English in school curricula[34]) studies explore the potential for identifying and promoting pedagogies that nurture effective classroom talk.

[32] See for example Taber, K. S. (2001). Constructing chemical concepts in the classroom?: using research to inform practice. *Chemistry Education: Research and Practice in Europe*, 2(1), 43-51. [33] See for example Coultas, V. (2012). Classroom talk: Are we listening to teacher's voice? *English in Education*, Vol. 46, Issue 2, , Summer 2012, pp. 175-189. (Part of a wider study on teachers' dilemmas with classroom talk). [34] Proposed reforms to the National Curriculum including a focus on 'correct' grammar and Standard English have led academics and educators to call for a better understanding of talk and language in learning to inform curriculum development/reform.

CASE STUDY 2: EFFECTIVE GROUP WORK IN CLASSROOMS

The SPRinG (Social Pedagogic Research into Group work) project was a large-scale UK project (2000 to 2005) carried out by the University of Cambridge, the University of Brighton and the Institute of Education, University of London, and funded by the Teaching and Learning Research Programme (TLRP) to investigate effective group work in classrooms.

Different groupings have the potential to affect children's learning attitudes and their interactions with teachers in ways that support learning. Children need to develop the skills of group work: listening, sharing, explaining and discussing ideas, as well as trusting and respecting each other.

The project responded to the lack of empirical evidence on the potential use of group work to influence learning, classroom behaviour, attitudes to learning; and the limited use of group-work in schools. It also addressed the absence of the role and importance of group work in supporting children's learning in Government policy. The project was set up in collaboration with teachers to design a programme of high-quality group work at the primary and secondary phases.

The research focused on two aspects of group work felt to be lacking in classroom practice:

- group work that shifted the balance of ownership and control away from the teacher to the children enabling children to become co-learners; and
- an understanding of group work that fully acknowledged the particular social setting of the classroom, i.e. that is the everyday classroom conditions that children and teachers work in.

In working together teachers and researchers started from the premise that 'if the relationships between group sizing, interaction type and learning tasks are planned strategically then learning experiences will be more effective' (Blatchford et al, 2003, p. 154).

The four-year project saw the development of a programme of group work integrated into everyday school life to explore the above areas – i.e. for example the learning purpose and social context of group work. It supported teachers in helping children develop communication and joint problem-solving skills. It helped teachers consider the composition of groups in relation to learning activities and desired learning outcomes. It worked with teachers to evaluate children's attainment throughout the course of the project, including information on their motivation and attitudes to learning as a result of being involved in effective group work activities.

IMPACT AND KNOWLEDGE EXCHANGE

Policy

- Awarded a contract by the Department for Education and Skills (DfES) to conduct a review of current research on grouping both as a part of school organisation and as a strategy to promote learning and social cohesion inside the classroom.

Practice

- Development of manuals, conferences and workshops to support teachers in developing children's group work skills.
- Gains in learner attainment and learning, such as in reading, mathematics and science, the result of greater levels of classroom engagement and high-level discussions.
- Teachers' professional skills and confidence enhanced and practice repertoires extended.
- Group work proved more effective when adopted by the whole school rather than individual teachers.

FURTHER RESEARCH

- Studies carried out in pre-school settings.
- Research in Caribbean secondary schools to enhance the practice of trainee teachers and combat educational underachievement.
- Research to facilitate learning between Hong Kong and England on the effects of group work in the teaching of primary mathematics.
- A Scottish extension to the original SPRinG project.

Closely related to these studies on classroom talk are those exploring collaborative learning in classroom settings and the benefits of adopting dialogue /dialogic approaches to learning (see case study 2: Effective Group Work in Classrooms[35]). As well as addressing issues raised by original research conducted by the researchers, such studies demonstrate the scope to build on investigations to explore wider issues. Examples include: the application of learning on effective group work to issues on educational underachievement, as well as how research can develop across national boundaries to support international collaboration and knowledge exchange.

Also relevant to classroom settings are recent studies on class size, an issue that is once again at the centre of Government policy, as rules are relaxed on the number of children allowed in a class amid a growth in pupil numbers[36]. Knowledge of the impact of class size on learners is vital and is of great concern to parents, teachers and schools. The Institute of Education (IOE), London, led by Professor Blatchford, has contributed a vast amount of enquiry in this area[37]. The design and development of the Class Size and Pupil Adult Ratio project (CSPAR – 1996-2003) in collaboration with schools, Local Education Authorities and Teacher Associations, saw the undertaking of a large-scale longitudinal study of the educational effects of school class size differences. The project built on interconnections between Government, policy makers and research evidence[38]. The study examined the integrated dynamics of class size, classroom processes and academic attainment. It showed that public adherence to the notion that small classes provide a better quality of teaching and learning is not a fact necessarily grounded in research evidence. Instead, the study looks at ways to maximise the opportunities of small classes and minimise the problems of large classes by considering all dynamics. The Department for Education and Skills (DfES) funded the project for three years to follow learners through to the end of primary schooling. The project's influence is seen in requests by policy makers, including UK Government and Scottish Council, to engage with learning from the project. It has also received strong press coverage. The value of the research can be seen in its influence on debate and policy in other national contexts such as Hong Kong, New Zealand, Holland, Canada and Singapore. This reaffirms the UK's ability to lead in the international arena as well as the need for thorough investigation to strengthen educational policy making.

INFORMING NATIONAL EDUCATIONAL INITIATIVES AND REFORM

Educational research supports the implementation, review and development of national education initiatives. It also raises critical questions on Government policies and interventions. In so doing, educational research can inform, confirm and challenge policy initiatives to the benefit of learners and broader society.

The Nuffield Review of 14-19 Education (2003 to 2009), an independent review of all aspects of 14-19 education and training in England and Wales[39], is an example of an investigation of national provision. The review praised aspects of current provision while calling for greater coherency in Government interventions across the age range. Findings and recommendations have informed Government policy in recent years in areas such as Young People Not in Education or Training, improved collaboration between schools, colleges and work-based learning providers, and Apprenticeship provision.

At the other end of an individual's learning journey are national studies to assess Government initiatives in Early Years education.

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[35] See for example Blatchford, P., Galton, M., Kutnick, P. & Baines, E. (2005) *Improving the Effectiveness of Pupil Groups in Classrooms*. ESRC Project Ref: L139 25 1046. [36] See for example Shepherd, J. (April 2013) 'Primary Pupils face rise in large classes'. *The Guardian*. Retrieved on 23 May 2013: http://www.guardian.co.uk/education/2013/apr/13/primary-school-large-classes. [37] See for example Blatchford, P. (2003) *The class size debate? Is small better?* Maidenhead: Open University Press. Also retrieved on 23 May 2013: http://www.classsizeresearch.org.uk/. [38] The research built on the US (Tennessee) STAR project (for Student-Teacher Achievement Ratio). [39] For details of reports published as part of the review see (retrieved on 23 May 2013) http://www.nuffieldfoundation.org/14-19review.

CASE STUDY 3: LONGITUDINAL STUDY OF EARLY YEARS PROFESSIONAL STATUS: AN EXPLORATION OF PROGRESS, LEADERSHIP AND STATUS

In 2009 The Centre for Developmental and Applied Research in Education (CeDARE) was commissioned by the Children's Workforce Development Council (CWDC) to undertake a longitudinal study of Early Years Professional Status (EYPS). It was a three-year study to explore the impact of Early Years Professionals gaining EYPS on the places where they worked, on their roles, career development and aspirations. It was based on two national surveys of Early Years Professionals and in-depth case studies of 30 Early Years settings across England.

The decision to introduce EYPS developed from a growing awareness of links between the qualification level of practitioners and the quality of provision delivered. Past studies showed that in general quality Early Years provision appeared to be higher in 'graduate-led' settings. Further studies also identified types of Early Years settings conducive to fostering the leadership needed to enhance long-term outcomes for children.

The longitudinal nature of the study provided the opportunity to evaluate the changes realised by the introduction of EYPS. The study examined:

- Early Years Professionals' views on their ability to carry out their roles since gaining EYPS;
- Early Years Professionals' practice in relation to: outcomes for children; impact on leadership roles in early years settings; impact on other aspects of early years settings, such as the quality of practice and interactions, as well as relationships with parents and other agencies;
- Early Years Professionals' career pathways and views on their career trajectory including any motivations or intentions to change setting, role or career;
- the extent to which Early Years Professionals have, or have not, undertaken (or plan to undertake) any further training or professional development; and
- the issues faced by Early Years Professionals in integrating children's perspectives (children's voice gained through listening to them) into their approaches to improving the quality of provision.

Overall, research findings found that gaining EYPS resulted in increased professional confidence, increased capacity to carry out leadership roles, and positive institutional change.

IMPACT AND KNOWLEDGE EXCHANGE

The majority of respondents reported that gaining EYPS had improved their own sense of professional status.

Respondents reported increased likelihood to take on leadership roles; a perception of better employment chances in other early years settings; increased confidence in developing colleagues' knowledge and skills; increased colleagues' readiness to listen to their advice.

The majority of Early Years Professionals in the case studies gaining EYPS had either consolidated their existing understanding of quality provision and practice leadership, or provided additional support in areas such as articulating their view of quality, or in leading aspects of change or professional development.

Findings from the longitudinal study supported the Government's response (January 2013) to the Nutbrown review on early education and childcare qualifications.

Returning to the question 'does educational research matter?' it would be a challenge for any individual or for society, based on the evidence presented here, to say no

CASE STUDY 4: BUILDING UPON SUCCESS: EXTENDING AND SUSTAINING CURRICULUM CHANGE IN PARTNERSHIP WITH THE HIGHLAND COUNCIL

This research tracks the implementation of Scotland's new Curriculum for Excellence (CfE), formally implemented in the 2010-11 session. Funded by the Scottish Government, the research was a collaborative project between The University of Stirling's School of Education and the Highland Council. The project was established to extend and develop the existing model of implementation for CfE by providing support to Highland teachers within the Highland region. Learning from the project would also be used to support future models for large-scale and sustained curriculum change for Scotland as a whole.

The new CfE is described as unique in its move away from the prescriptive culture of previous curricula towards a more developmental approach to curriculum, which empowers teachers as agents of change and professional developers of the curriculum; and in its advocacy for a more apparent approach to student-centred practices to develop confident individuals, successful learners, responsible citizens and effective contributors.

Previous research on curriculum implementation identifies a gap between policy aims and reforms and the practical implementation of curriculum as teachers mediate changes on the ground. Intended policy aims often become mutated at different levels of the implementation process, becoming something very different in practice.

The research is positioned between the macro level of curriculum implementation – the result of particular policy aims – and the reality of implementation – how it is enacted and received in Scottish schools by teachers and senior managers.

This is the result of various factors: the capacity of teachers to reconcile curriculum reform with the institutions that they work in; their existing beliefs about policy and practice; the continued pressures of external accountability; and the demand on teachers to become agents of change overnight.

In working with teachers to understand what the implementation of CfE means for them: how they feel about the new curriculum; and the factors which improve or impede their implementation of the changes, the research project does not seek to criticise teachers or to show that they lack the knowledge and capacity to adapt to curriculum change. Instead, the project worked with teachers and senior managers (across nine schools – secondary and primary, and representatives of the local authority) to understand their perceptions and experiences of implementation.

The research found mixed experiences of implementation. For example, teachers were positive about the new curriculum and felt it connected with their own beliefs and ideas about education. However, insufficient time had been given to teachers to discuss together and engage with the philosophy of the curriculum before (or as a part of) implementation.

IMPACT AND KNOWLEDGE EXCHANGE

Policy

- Findings from the research will be used to inform and develop future policy in the Highlands and in Scotland as a whole.

Practice

- Progress in child-led learning, for example children taking greater control over what they learn.
- Developments in approaches to assessment – formative (for learners), self and peer (for teachers).
- Increase in practitioner networks to further facilitate the development of CfE, for example an increase of teacher participation in professional learning communities and peer review activities to support implementation.
- Participation of experienced teachers in a guided curriculum development project that uses a collaborative professional enquiry approach to working.
- Events held across the region for teachers and senior managers to enhance professional learning and raise capacity for school-based curriculum development.

Research

- Additional research into the implementation of CfE more widely across the authority.

These include longitudinal studies to track professional experience, practice and institutional change (see case study 3: Longitudinal Study of Early Years Professional Status[40]), and studies such as one by the IOE to investigate the effectiveness of Early Years education[41]. One outcome of the IOE study is a focus on ratios (the number of adult educators to young learners) in pre-school settings. These concerns are again in the public eye following Government proposals to allow individual adults in Early Years settings to work with a higher number of children[42]. Providing the Government with a strong evidence base to inform proposals is a significant role for the educational research community. Again, along with the IOE's current study, additional research by the IOE: '*The Effective Provisio*n of pre-school Education (EPPE) Project' funded by the then Department for Education and Employment (DfEE) is of great relevance[43].

A body of work, with a local and national focus, on Assessment for Learning (AfL) and Formative assessment has also informed Government strategy, for example the Labour Government's National Strategies (including the launch of the AfL scheme in 2008). As a consequence of research, classroom practice has seen a greater understanding of the role of assessment (formative and summative) in learner development. It also, arguably, informed the move away from testing and the publication of league tables in Wales (see Whitty, 2006)[44]. Lead researchers continue to prioritise a focus on AfL to ensure a firm understanding of its principles and application to practice[45].

Other national studies have investigated large-scale curriculum reform across the UK. Since 1988, the school curriculum followed by children in state schools has undergone massive and continued change. This has seen the introduction of the National Curriculum in England, Wales and Northern Ireland and the Curriculum for Excellence in Scotland. Research funded by the Scottish Government has enabled an investigation of the implementation of the Curriculum for Excellence. Research findings continue to inform both the future development of the curriculum and the process of implementation across Scotland (see case study 4: Building upon Success[46]).

ESSENTIAL TO TEACHER EDUCATION

Higher Education (HE) has a long history in teacher education, with departments of education contributing both a research and teaching role. The involvement of HE brings years of experience and a strong evidence-base to the development of the profession.

As a result, there is a plethora of research studies undertaken with teachers and senior managers in schools and other learning environments/institutions, at the stage of Initial Teacher Education (ITE) and Continued Professional Development (CPD). This crosses sectors from pre-school to post-16, and with a range of practitioners including learning supports such as Teaching Assistants. Learning from studies highlight the need for CPD to be school-based, personalised, collaborative and based on a coaching model[47].

[40] Hadfield, M., Jopling, M., Needham, M., Waller, T., Coleyshaw, L., Emira, M. & Royle, C. (2012) *Longitudinal study of Early Years Professional Status: an exploration of progress, leadership, and impact: final report.* Department for Education. [41] A study led by the Institute of Education on Effective Pre-school, Primary and Secondary Education (EPPSE). Started in 1997, the project is still progressing as it tracks the same cohort of learners from age three to the last year of compulsory schooling and on to their post-16 educational, training and employment options. See (retrieved on 23 May 2013) http://www.ioe.ac.uk/research/153.html. [42] Proposed changes are outlined in the Department for Education's report (2013) *More great childcare: Raising Quality and giving parents more choice. See (retrieved on 23 May 2013) https://www.gov.uk/government/publications/more-great-childcare-raising-quality-and-giving-parents-more-choice.* [43] Taggart, B., Sammons, P., Sylva, K., Melhuish, E., Siraj-Blatchford, I., Eliot, K. & Walker-Hall, J. (1997-2003) *The Effective Provision of pre-school Education EPPE) Project.* Institute of Education. Placed in the public domain February 2013. [44] Whitty, G. (2006) *ibid.* [45] Stewart, W. (July 2012). 'Think you've implemented Assessment for Learning?' *Times Educational Supplement* Retrieved on 23 May 2013 http://www.tes.co.uk/article.aspx?storycode=6261847. [46] See for example Priestley, M. & Minty. S (2013) Curriculum for excellence: 'A brilliant idea but…' ' *Scottish Educational Review*, 45 [1], pp.39 – 52.

CASE STUDY 5: JOINT PRACTICE DEVELOPMENT (JPD)

The following case study is being carried out in an Adult Education Centre in the South West of England by a course tutor. The project is trialling and evaluating a Joint Practice Development (JPD) approach to working for tutors. The project was developed as part of the Learning and Skills Improvement Service (LSIS) Research Development Fellowship (RDF) Scheme. The scheme promotes practitioner research as a means of supporting professional and organisational improvement in the learning and skills sector. The scheme is run in partnership with the Institute for Learning (IfL) and the University of Sunderland's Centre for Excellence in Teacher Training (SUNCETT). The latter provides the support of university-based researchers to support practitioners throughout the duration of the scheme.

The project was developed on the hypothesis that JPD fosters professionalism by empowering tutors. It recognises tutors' privileged position for identifying and meeting learner need. It effectively builds on tutors' strengths and helps them address their own weaknesses by letting them set the improvement agenda. It builds team cohesion and strengthens relationships without sacrificing diversity.

Tutors attended four workshops over a period of three months adopting JPD approaches to working. This involves: fostering non-hierarchical relationships and critical but non-judgemental communication among tutors; planning together to develop curriculum – favouring fresh and creative ideas that do not take their impetus from agency or Government directives; and undertaking small-scale action research projects to focus on weak areas of teaching.

The JPD approach and the action-research built on existing findings from research that showed the benefits of fostering 'flat' relationships between staff members to encourage a wider spectrum of teachers to explore and articulate their practice; and that practitioner research at the organisational level accelerates improvements in practice.

Preliminary feedback from tutors participating in the project has indicated positive engagement with the JPD approach. Through RDF residentials, participants have had the opportunity to meet and share learning with other colleagues carrying out similar research. The project is still ongoing.

RECOMMENDATIONS

(For the Adult Education Centre involved in the project)

- Make JPD workshops a twice-termly fixture in the timetable to encourage the development of a Community of Practice.
- Grow and learn as a research community with an expanding range of research techniques.
- Get best value out of external subject specialists by inviting their participation in JPD.
- Develop critical discussion skills.
- Value colleagues' different approaches.
- Develop shared values of care, collegiality and democracy.

Educational research creates an environment of self-reflection and dialogue between educators within and across institutions. It also helps to expose practitioners to wider research theory and the opportunity to work in collaboration with researchers. Research projects also support practitioners' learning in their practice environments. This contrasts to, and is arguably more effective than, external training where practitioners leave their work environments.

Classroom-level research (action-research/practitioner-led research/reflective practice) allows practitioners, through critical investigation of their own practice, to ask questions about how children learn in everyday environments. Case study 5: Joint Practice Development[48] shows how practitioners can

[47] See presentation by John Furlong, Director of the Oxford University Department of Education, *Educational Research in the UK Capacity, Quality and Impact*. Retrieved on 7 June 2013.

be empowered through involvement in small-scale research to contribute not only to their own professional development but also to institutional development, ultimately improving outcomes for learners. The case study is located in the adult education sector, showing the contribution of research in all practice environments.

Other examples include engagement by the Training and Development Agency for Schools (TDA) (2003 to 2008) on the integration of Information and Communications Technology (ICT) in ITE[49]. The programme funded ICT equipment in schools with a view to increasing the provision of/access to ICT for teacher trainers, as well as to encourage research on the use of ICT in teacher training. It sought to promote a culture of innovation, change and experimentation, seen as vital to developing quality in teacher education. Around 13,200 teachers benefited from the programme across a five-year period. Overall, the availability of ICT, and support in its use, saw teachers grow in familiarity with ICT equipment and in confidence when applying ICT to their practice.

As well as supporting the training of teachers, educational research also proves valuable in ensuring that the methods used to develop teachers are effective. For example, a study by the University of Aberdeen analysed the use of action-research as a means of developing teacher knowledge[50]. By questioning the nature, role and use of action-research in teacher education and in the promotion of evidence-based practice, the study highlights the role played by educational research in reassessing approaches to training UK teachers and trainers. Also, exploration into teacher agency by the Teacher Agency and Curriculum Change project[51] seeks to identify and understand those factors that promote teacher agency (empowers teachers to adopt an active role in the development of curriculum and educational improvement), in the context of the Curriculum for Excellence in Scotland.

INVESTIGATING INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT) TO PROMOTE LEARNING

In the past few decades, Information and Communications Technology (ICT) has transformed the landscape of education. ICT is now an integral part of UK learning environments, demanding ever-changing skills and knowledge.

Written in the context of the relationship between technology use and educational performance in science, a research study by the Organisation for Economic Co-operation and Development (OECD) states: "Governments need to create the necessary incentives to engage teachers in the exploration of the benefits of ICT in education" (OECD, 2010: 16).[52]

Studies that engage teachers in an analysis of ICT in practice highlight the need to address assumptions about the use of ICT in learning (for example those that assume the benefits of ICT).

A study by the Knowledge Lab, a collaboration between the IOE and Birkbeck University, investigated claims on the supposed benefits of teachers' use of ICT, for example enhanced learning outcomes, learner engagement and improved learning environments. The study analyses the factors influencing potential benefits, including teachers' perceptions of the benefits of using ICT, and the institutional factors that impact on potential benefits. The study argues that more attention needs to be paid to the use of ICT in schools. An area highlighted by the study is the need for

[48] McClure, B. (Current and unpublished). *Joint Practice Development: How do you create the conditions for continual, self-motivated improvement in Adult & Community Learning*? [49] Hadfield, M., Jopling, M., Royle, K. & Southern, L. (2008). *Evaluation of the Training and Development Agency for Schools' funding for ICT in ITT projects*. TDA [50] Colucci-Gray, L., Sharmistha, D., Gray, D., Robson, D. & Spratt, J (2013) Evidence-based practice and teacher action-research: a reflection on the nature and direction of 'change'. *British Educational Research Journa*l, Vol. 39, Issue 1, February 2013, pp. 126-147. [51] See for example (retrieved on 23 May 2013) http://www.stir.ac.uk/education/research/research-and-knowledge-exchange-projects/curriculum-and-development/teacher-agency-and-curriculum-change/. [52] OECD (2010) *Educational Research and Innovation: Are the New Millennium Learners Making the Grade? Technology Use and Educational Performance in PISA 2006*. Paris: OECD.

greater understanding in policy and practice of the social contexts that surround schools, teachers and technology use. This contrasts to interventions designed to target 'weak' teachers for failing to make the best use of technology. (The study suggests that this is a common approach). Similarly, other studies have questioned the supposed link

CASE STUDY 6: INTERACTIVE TEACHING AND ICT

The Interactive and Teaching ICT project was developed to explore possible links between teaching approaches that favour dialogue and exchange (interactive approaches) and the use of ICT to support such learning. As part of the project, it also looked at how engagement between teachers and researchers in reflective dialogue can contribute to changing teachers' thinking and practice.

Funded by the Economic and Social Research Council (ESRC), the project built on existing theory and research investigating similar issues. It worked with 41 teachers in 21 schools (primary and secondary) across a two-year period (2005-2007) in mathematics, science and languages. Information on teachers' perceptions of interactive teaching was gathered at the start of the project, as well as baseline information on children's subject knowledge, their perceptions on how they participated in lessons, how they learned from this, and how ICT helped. The project was divided into two phases, with some teachers using ICT in phase one while others did not, and with all teachers using ICT in phase two when it was felt appropriate to learning activities.

The project viewed learning as a social activity (that is one that takes into account the contexts of learning, and how teachers and learners interact with each other to 'build' knowledge through dialogue and exchange). This is supported by the opportunity for participants (including learners) to reflect on 'what they do' during teaching and learning activities.

Findings from the project showed that the presence of ICT, such as computers and White Boards, do not necessarily raise student attainment. It found that:

- there was no significant difference in learner attainment between classes using ICT and those not using ICT (in phase one). Data showed that although ICT captures student attention, teachers were unable to convert its use into significant improvements in learning. Instead, the level of interactive learning was more important in raising achievement than the use of ICT;
- a higher proportion of interactive teaching is beneficial for learning and ICT can be used to stimulate and support this type of learning;
- ICT can help learners to engage with lesson content and influence the course of lessons, but not always in the way intended by the teacher;
- teachers should be aware of the need to intervene during ICT tasks so that pupils achieve learning objectives in addition to task outcomes;
- interactive teaching approaches, rather than the use of ICT itself, resulted in improved student attainment.

The project concluded that the potential of ICT to support group work is not widely recognised; and that research on the role of ICT in supporting forms of talk in group work should be built on with more resources and professional development.

IMPACT AND KNOWLEDGE EXCHANGE

Practice

- Increased student attainment when ICT was used to support and motivate more interactive approaches to learning.
- Teachers reported changes in their practice, for example decreasing the amount of direct teaching; broadening the range of activities for students; and increasing student independence by supporting students to become active learners.
- Teachers valued discussions with expert observers (the researchers) as it helped to focus their minds on the significant events that influenced learning. This has implications for future CPD, for example a preference for mentors (including teachers already using ICT to support interactive approaches to learning) to work with teachers in schools or clusters schools rather than external training.

CASE STUDY 7: RAPID REACTION AND RESPONSE (R^3): THE IN-CLASSROOM USE OF MOBILE TECHNOLOGIES TO SUPPORT DIAGNOSTIC AND FORMATIVE ASSESSMENT AND FEEDBACK

The Rapid Reaction and Response (R^3) project was a Higher Education Academy (HEA) Pathfinder research project investigating the use of in-classroom mobile technologies to support real-time feedback and diagnostic/formative assessment during learning sessions. The mobile technologies used during the project included electronic voting systems, iPods, mobile phones, Tablet PCs and interactive tablets. The project aimed to learn about the strengths and weaknesses of integrating these mobile technologies into learning and teaching practices.

The initial project ran for one year (May 2007 to April 2008) and involved 13 lecturers (two per faculty) at the University of Kingston. The project formed part of the University's Quality Enhancement and Blended Learning Strategies. Lecturers were supported by two mentors with experience in the use of mobile technologies. Lecturers were required to integrate mobile technologies into at least one model per semester, and attend monthly workshops on assessment: to write assessment items, to do hands-on activities with mobile technologies, and to benefit from the sharing of practice. They were also actively involved in data collection processes.

Assessment is an essential part of learning. Despite this, a HEFCE survey (2006) found that feedback on assessment was one of the weakest areas for most universities in the UK. Formative assessment (as opposed to summative) helps educators to gather up-to-date information on learners' knowledge and understanding. It helps educators review their teaching practices in light of their ability to achieve learning objectives. It also helps to compare learners' progress across different settings and to provide a tool for accountability.

In corroboration with previous studies, findings from the research showed that use of mobile technologies in classrooms improved student motivation and engagement with learning; supported learners in having real-time feedback on their understanding; and improved how lecturers communicated lesson content.

Lecturers also reported on changes in their practice and to the learning environment, for example more interaction and questioning and being more aware of opportunities for formative feedback.

IMPACT AND KNOWLEDGE EXCHANGE

Practice

- Eleven out of the 13 participating lecturers successfully implemented mobile technologies as part of their teaching.
- Participants' teaching became more interactive through integrating the technologies.
- Based on the positive impact of mentors to the success of the programme, more mentors will be used in following years, including a number of current participating lecturers to up-skill other staff.
- The University expanded the number of mobile technologies available for learning and teaching.
- University departments have invested in the technologies (such as PPVote) so that faculty members have easy access.
- Technologies are housed in libraries at different campuses to provide easy access.

between ICT and raised learner attainment, for example see case study 6: Interactive Teaching and ICT[53].

The potential for ICT not only to be used in classroom practice but also to impact on teachers' pedagogical choices is seen in case study 7: Rapid Reaction and Response (R^3)[54]. Among other things, the study shows how the use of mobile technologies facilitates teachers in adopting more dialogic methods to teaching that support communication and exchange between peers and with teachers.

Moving beyond schools, studies on ICT concern themselves with pre-school children's experiences in the home and with learning across the adult life-span. A recent study

[53] Kennewell, S. (2008) Interactive teaching and ICT. *Teaching and Learning Research Briefing*, March 2008, Number 33.

looks to fill the gap in knowledge on pre-school children's experiences with digital technologies in the home, including domestic technologies and digital toys and games[55]. It explores how digital technologies can help facilitate early communication and creative experiences. The study calls for even greater recognition by pre-school and Early Years specialists of the growing expertise that children bring when they enter formal schooling. This expertise is only set to increase with the digitalisation of our everyday lives. Practice and policy needs to respond to this in imaginative ways to capitalise on children's experience and knowledge.

In adult education, studies include an investigation by the Open University (OU) to explore attitudes to digital technology and approaches to studying for students taking OU courses[56]. One finding noted by the research, and of relevance to practitioners and policy makers, is the need to move away from stereotypes regarding younger and older learners in the use of digital technologies. The study found positive attitudes to digital technology across all age ranges and a commitment by all learners to integrate digital technologies into their HE experiences.

STRENGTHENING EQUAL ACCESS TO EDUCATION FOR ALL

Commenting on equal access to education, Gemma Tumelty, National President of the National Union for Students (2006-2008) stated that equality in society is absolutely and fundamentally linked to equality in access to education[57].

It is well established in society that access to desired and quality education throughout an individual's life benefits not only the individual but society more broadly. This understanding can be attributed to many factors, such as an individual's personal experience (benefits they or family members have enjoyed), a common sense view of the world, evidence from research and messages in media. Benefits from education may include improved life chances, such as work opportunities, higher salaries, comfortable lifestyles; and personal happiness, fulfilment and safer communities. Although the relationship between education, personal benefits, social inclusion, community cohesion, citizenship and so on is complex, it is very real[58].

Successive governments have been concerned with widening access to education for all members of society and in particular for those from under-represented groups such as women, people from Black and Minority Ethnic backgrounds and persons with disabilities. Issues of access are closely related to those of participation and retention. Policies developed to address all of these areas need to be targeted and cost-effective, hence demanding a strong evidence base to inform interventions.

Research in these areas to produce knowledge and to inform policy and practice is far-reaching. For example, studies on widening participation in HE have sought to understand the drivers that enable or act as barriers to access for learners from different backgrounds. Building on a body of existing research, case study 8: Widening Participation in HE[59] adds to the evidence

[54] Linsey, T., Panayiotidis, A., Ooms, A. & Webb, M., (2008). *The in-classroom use of mobile technologies to support diagnostic and formative assessment and feedback*. Paper presented at the Seventh European Conference on e-Learning, Agia Napa, Cyprus. [55] McPake, J., Plowman, L. & Stephen, C. (2012) Pre-school children creating and communicating with digital technologies in the home. *British Journal of Educational Technology*, Vol. 44, Issue 3, May 2013, pp. 421-431. [56] Jelfs, A. & Richardson, J. T.E. (2012) The use of digital technologies across the adult life-span in distance education. *British Journal of Educational Technology*, Vol. 44, Issue 2, March 2012, pp. 338-351. [57] Tumelty, G (April 2007) 'Equal access to education means an equal society'. *The Guardian (Mortarboard Blog)*. Retrieved on 23 May 2013: http://www.guardian.co.uk/education/mortarboard/2007/apr/18/gemmatumelty. [58] The Institute of Education, London, houses a research team, the Centre for Research on the Wider Benefits of Learning (WBL), to investigate the personal and social outcomes of learning across the life course. The Department is funded by Government. See (retrieved on 23 May 2013) http://www.ioe.ac.uk/research/168.html. [59] Chowdry, H., Crawford, C., Dearden, L., Goodman, A. & Vignoles, A. (2013) Widening Participation in Higher Education: analysis using linked administrative data. *Journal of the Royal Statistical Society: Series A (Statistics in Society)*, Vol. 176, Issue 2, February 2013, pp. 431-457.

CASE STUDY 8: WIDENING PARTICIPATION IN HIGHER EDUCATION: ANALYSIS USING LINKED ADMINISTRATIVE DATA

This study is a quantitative study to better understand the determinants of participation in Higher education (HE) among individuals from low socio-economic backgrounds.

Despite Government policies aimed at widening participation for those in lower socio-economic groups and other unrepresented backgrounds, socio-economic inequalities in degree participation and achievement appear to have worsened during the 1980s and early 1990s.

The study brings evidence to bear on this issue. In so doing, the research adds to the research base developed by UK and international researchers investigating similar issues.

The study seeks to inform policy so that correct interventions can be implemented to address the socio-economic imbalance in university attendance.

The study uses a unique data set for analysis: education data from various administrative sources is linked to create a census of the population of secondary school pupils in England – approximately half a million pupils in each of the two cohorts studied. This is different to previous data that only used individual-level administrative data from HE records alone. An advantage of linking is that individuals' prior achievement at age 11, 14 and 16, as well as achievement at 18, can be analysed and considered.

Findings from the research suggest that certain policy interventions do little to address socio-economic imbalances as they target the wrong factors at the wrong stage in students' educational careers. Government policy should focus on earlier interventions to support individual achievement at age 11 or before during the primary age range.

IMPACT AND KNOWLEDGE EXCHANGE

Findings

- Pupils from lower socio-economic status (SES) backgrounds are much less likely to participate in HE then pupils from higher SES backgrounds.
- The difference in participation does not occur at the point of entry to HE.
- The inequality in participation largely occurs because lower SES pupils do not achieve as well at secondary level as their more advantaged counterparts.

Implications

- Findings confirm research that shows socio-economic advantages occur early in individuals' lives.

Recommendations

- Policy interventions focused on encouraging 18-year-olds to apply to university, such as the offer of bursaries, are unlikely to make an impact on redressing socio-economic inequalities.
- Policy to improve achievement at age 11 or even in primary school for individuals from lower SES backgrounds is likely to make greater impact.

through quantitative analysis. The study proposes a refocus of Government policy in widening access to university, from financial incentives such as bursaries at the point of entry to university, to interventions at an earlier stage in schooling (as early as primary) to raise attainment.

Exploring gender issues in the context of access, participation and retention is the subject of many studies. One example is a recent study examining gendered patterns of participation in post-compulsory STEM education. The study raises questions on the limited impact of three decades of Government initiatives aimed at increasing the participation of women, as well as those targeting the recruitment of women into STEM employment[60]. The research highlights the complexities in understanding why girls/women may (or may not) continue in STEM subjects through to employment, and the need for greater nuance in policy-making. Similarly, a study by the IOE investigating men's access

[60] Smith, E. (2011) Women into science and engineering? Gendered participation in Higher Education and STEM subjects. *British Educational Research Journal*, Vol. 37, Issue 6, December 2011, pp. 993-1014.

to life-long learning also calls for greater nuance in Government policy, away from a narrow, simplistic focus on 'raising aspirations' to one that considers the hidden operations of power, privilege and inequality in influencing men's aspirations[61].

In relation to these issues, there is also a growing body of research of relevance to ethnicity (and/or 'race'). These consider issues from varied angles such as historical, cultural, the constraints of systems, ideological and individual. Examples of two investigations are: a study on the ethnic dimension of under-achievement in English Schools[62]; and on the attrition and retention rates of minority ethnic trainees on teacher training courses[63] (dropout rates tend to be higher than those of their White counterparts). The latter proposes a number of strategies for practice in ITE institutions to improve retention, including flexibility in course structure, tackling discrimination, and structured mentoring during placements. The need for such studies takes on growing significance as we live in societies and communities that are increasingly diverse, demanding skilled and balanced enquiry.

Finally, research on disability and/or special educational needs (SEN) is also of significance when considering issues of widening access, retention and participation. Areas covered by research are varied and address issues from inclusive education (for example, mainstream versus special school provision) to transitions to employment and training post-16. For instance, a study in 2009 by the Equality and Human Rights Commission (EHRC), found that young people with disabilities faced more difficulties accessing information advice and guidance (IAG), than their non-disabled counterparts, resulting in poor transitions from compulsory schooling to further education, training and employment[64]. Studies also address specific disabilities, such as studies to investigate the impact of mainstream and special schooling on children with Autism Spectrum Disorder[65]; and of learners with a Statement of SEN, for example, the *Making a Statement* (MaST) project (funded by Nuffield Foundation), developed to provide a detailed picture of day-to-day educational experiences of children with a Statement of SEN in light of the Government's proposed profound changes to the system of SEN[66].

CONCLUSION

This paper demonstrates the contribution of educational research across educational provision. However, the case studies summarised here are a drop in the ocean and are placed against a backdrop of significant achievement in educational research, including successful initiatives like the TLRP. Research has been vital in recent years in helping us understand how children learn and how we can continue to close the attainment gap. The revolution in Early Years policy and practice could not have occurred or been as effective without a deep understanding of cause and impact generated by the research base.

These examples also provide examples of the role of educational research in supporting the development of a knowledge economy and in providing a knowledge base for facing future economic, social and global challenges. In light of this, Government

[61] Burke, P.J. (2006) Men accessing education: gendered aspirations. *British Educational Research Journal*, Vol.32, Issue 5, October 2006. pp 719-733. [62] Kingdon, G. & Cassen, R. (2013) Ethnicity and low achievement in English Schools. *British Educational Research Journal*, Vol. 36, Issue 3, June 2010, pp. 403-431. [63] Basit, T.N., Roberts, R., McNamara, O., Carrington, B., Maguire, M., Woodrow, D. (2006) Did they jump or were they pushed? Reasons why minority ethnic trainees withdraw from initial teacher training courses. *British Educational Research Journal*, Vol 32. Issue 3, June 2006, pp. 387-410. [64] Jackson, G. & Hudson, A. (2009) *Engaging all young people in meaningful learning after 16: a survey.* Manchester: EHRC. [65] Reed, P., Osborne, L., & Waddington, E. (2012) A comparative study of the impact of mainstream and special school placement on the behaviour of children with Autism Spectrum Disorder. *British Educational Research Journal*, Vol. 38, Issue 5, October 2012, pp. 749-763. [66] Webster, R. & Blatchford, P. (2013) *The Making a Statement Project.* London: Institute of Education.

moves to safeguard and support the capacity of educational research need to be prioritised.

Clear commitment is needed to ensure both an understanding of and a wider confidence in educational research: its aims, achievements and contribution. In this climate, BERA is concerned that the impact of recent Government policies in HE is creating a threat to this research. Examples include the erosion of the presence of HE in teacher education with the likelihood of increasing amounts of funding being routed through schools, and the increasing 'privatisation' of the university sector, resulting in cuts in university education department budgets and reforms in students fees and support (BERA-UCET 2012)[67]. A reduction in the sector's capacity to carry out research is likely to have long-term repercussions in terms of progress in education and in the loss of skills and expertise in the social sciences.

Going forward, the educational research community, represented by BERA, would like to see:

- sustained funding for educational research to enable capacity building and the ability to maintain the UK's high international standing in both research and educational practice;
- a clear vision for educational research initiatives such as that seen in the TLRP, the EPPI, and the establishment of Research Centres such as the Wider Benefits for Learning, embedded in well-funded, sustainable frameworks and contexts;
- recognition, supported by strong Government backing (including financial), of the contribution of educational research to the development of the UK's knowledge economy as well as to addressing other future challenges;
- increased exchange between all stakeholders/audiences of educational research, including Government, to develop a shared understanding of the quality, value and impact of educational research;
- a commitment by Government to ensure a strong and continued role by university HE departments in teacher education; and
- improved understanding of the contribution of educational research to 'blue-skies' research (*of* education) as well as *for* education in practice.

BERA will continue to play a leading role in this work. While being a membership body drawn primarily from the educational research community, we have increasingly worked to connect researchers, policy makers and practitioners. Through innovative publications, a wider range of seminars, and events and projects such as our joint Inquiry with the RSA into Teacher Education, we want to ensure that the highest quality research can inform policy and practice.

The best quality educational research may not provide the immediate breakthrough of some STEM areas but it is about the careful accumulation of knowledge and understanding that is of no less public benefit. However, that research needs to be funded, sustained and embedded.

Returning to the question 'does educational research matter?' it would be a challenge for any individual or for society, based on the evidence presented here, to say no. The void that would be left by its absence is unthinkable. The case studies and themes developed here show that creating an education system able to compete on an international scale requires insight, challenge, critique, strong educational knowledge and robust evidence. This can be achieved. Educational research is already achieving this and with the support of Government will continue to do so long in to the future.

[67] BERA-UCET Working Group on Education Research (2012) *Prospects for Education Research in Education Departments in Higher Education Institutions in the UK*. BERA & UCET.

Acknowledgements
BERA would like to thank those members who supplied details of the case studies used in this document. We would also like to thank Sharon Walker for her role in putting together the document and to Sarah Newman for editing.

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ISBN: 978-0-946671-34-2