Institution: Brunel University
Unit of Assessment: 25 Education

a. Context

Brunel's Education key users are: teachers in all phases; those involved in ITE (initial teacher education) and continuing professional development (CPD) in schools, universities and at policy level (e.g. the National College for Teaching and Leadership); and young people and those who work with them (e.g. careers advisors and youth workers). However, our research also impacts on a wider range of users from performance artists to government agencies at local and transnational levels and has specific benefits for organisations concerned to promote participation and attainment in Science, Technology, Engineering and Mathematics (e.g. Royal Academy of Engineering) and those engaged in promoting equity in education (e.g. the Equality and Human Rights Commission).

Education research is structured into two groups that reflect our current work and speak to ongoing debates in policy and practice: Pedagogy and Professional Practice (PPP) led by Koshy and Toplis; and Education, Identities, and Social Inclusion (EISI) led by Mendick. There are strong connections between the groups with collaborative projects, for example, on the role of ethnicity in young people's attitudes to physics (commissioned by the Institute of Physics) and a University Research Centre, the Brunel Able Children's Education (BACE) Centre, directed by Koshy, which develops effective curriculum provision through specific adaptations and interventions in Mathematics, English, ICT and Science. BACE also identifies and develops the talent inherent within specific groups e.g. students with high potential from urban areas of social deprivation and very young (4-7 year-old) children.

Key PPP impacts are strategies for talent development and widening participation through curriculum interventions and adaptations; models for effective STEM pedagogies; strategies for increasing participation in STEM, including among under-represented groups, and ways of engaging with young people's online 'play'. These impacts draw on research into: design experiments in the area of talent development and widening participation (Koshy); inquiry-based learning in formal educational settings (Watts); broadening access and participation in STEM (Casey, Hossain, Koshy, Mendick, Toplis); using ICT for diversifying and personalising learning (Toplis); and young people's fantasy cultures (Crowe, Watts). Key EISI impacts are policies for tackling bullying in schools; models for effective initial teacher education in issues of inclusion; strategies for supporting the transition from school to higher education; and guidelines to promote gender equity online. These impacts draw on research into: bystander behaviour in bullying in schools (Rivers) and the phenomenon of 'sexting' (Harvey); professionals' engagement with initial training and development (Chappell, Gower, Nicholls); histories of teacher education, the teaching of secondary English and comprehensive schools (Crook); inclusive practices in the transition to higher education (Green); online representations of women scientists (Mendick); and equity and young people's aspirations (Harvey, Ludhra, Mendick).

b. Approach to impact

Our approach to impact is based on building strong, reciprocal relationships with key users *and* extending the reputations of PPP and EISI for high-quality policy and practice-oriented work.

Relationships with teachers are developed and sustained by individuals, research groups and the Partnership Development Unit (PDU). The PDU creates partnerships among Brunel academics, schools and teachers. This is a two-way process, in which teachers are able to identify their own priority areas for research (which, for example, can then be taken up by postgraduate students in their dissertations and feed into staff research bids) but also have easy access to ongoing research in Education, including through Brunel-led CPD. For example: staff presented the outcomes of their research at the Hillingdon Education Festival, offered teachers strategies to help them strengthen school policies and gather data for Ofsted inspections and established collaborative research projects; Gower is working with secondary schools using video of teaching to stimulate collaborative discussion in support of teachers' professional learning. We have a strong focus on practitioner publications e.g. Green authored the *Practical Guide to Teaching English*; Watts has chapters in *Learning to Teach, Environmental Education in Context*, *How Science Works* and

Debates in Science Education (which he edited), and*;* Babbar, Ineson and Mendick have chapters in *Debates in Mathematics Education* (co-edited by Mendick).

Knowledge transfer has directly benefited teachers through their ITE and CPD by providing improved vocational training and a stronger research base to support their pedagogy. The TDA (now NCTL) funded work examining ICT use in ITE (Green) and literacy teaching (Jones and Ludhra). Brunel educationalists have exerted a wider curricular influence and contributed to UK education governance through strategic collaboration. For example, Jones engaged in a successful public-private partnership when she led the evaluation of British Telecom's Partners in Communication project and Green advised OFQUAL on English literature qualifications.

Links with a wide range of school-based stakeholders have been strong for many years, but *steps are being taken to strengthen our relationships with a wider range of users*. Notably, Mendick and Harvey are working with AccessHE, BBC Learning, the Department for Work and Pensions, and the National Institute of Careers Education and Counselling on their current ESRC project on celebrity and youth aspiration (CelebYouth). Professional bodies also provide channels for research to be communicated directly to users. For example, young people's attitudes to STEM were profiled by Crowe, Hossain, Mendick and Toplis for the Royal Academy of Engineering, the Institute of Physics, the Science Museum and the UKRC, with this work being used to inform organisational policies (e.g. the Making Women in SET Visible Online Toolkit). Crowe has also written a series of articles on young people's engagement with technology for Canvas8, a behavioural insights agency, which offers analysis of consumer trends, market research and industry commentary.

We are combining high-profile events and wider media communication to build the reputations of PPP and EISI. The BACE Centre has held a series of high profile knowledge transfer conferences and EISI has hosted two national seminars on identities in education, and a range of other events, including collaborations with the British Sociological Association (BSA) and BERA. The University works with a PR company to support staff media engagement e.g. they helped Rivers set up his monthly *TES* column; secured *Guardian* Network blogs for Koshy, Harvey & Mendick and Watts; and BBC Radio 4 (*Thinking Allowed*, *You and Yours*) and New Zealand Radio interviews for Crowe. Several academics are pioneering online communication. Mendick and Harvey's interactive website for their CelebYouth research was named an exemplar of excellence in digital sociology by the BSA.

c. Strategy and plans

One of four objectives of the 'Education Research Strategy 2011-2016' is 'to have strong relevance to and impact on educational policy and practice'; this is also part of Brunel's core mission and strategic plan. Thus it serves as a guiding principle of our research activities. The Deputy Head of School (Research) coordinates the Education impact strategy and is proactive in ensuring website content is up-to-date, promoting media opportunities, organising training, supporting collaborations, publishing a termly School Research Newsletter, and ensuring regular publicity via Brunel's outward-facing, glossy research newsletter *Leading Edge*.

We recruit staff who have user interests at the heart of the work and support them during their research to enable public engagement and so maximise opportunities for impact. This support includes: a competitive research leave programme (Watts in 2008/9; Jones and Rivers in 2012/13) and knowledge transfer leave programme (Koshy in 2012/13), with funding to cover teaching and administrative duties; university training in using the Research Support and Development Office's (RSDO) 'Impact Toolkit' and Education specific training (e.g. on establishing European partnerships and developing collaborative networks); expertise and advice on liaising with funding bodies, charitable organisations and industry, through the RSDO; institutional funding to bring together potential collaborators to work on a specific research bid (Mendick received a grant in 2011/12 that led to an ESRC bid); and a public lecture programme (Koshy delivered a lecture in 2010/11; Rivers in 2009/10 and 2012/13).

Going forward, we have identified three main areas of strength in current impact activity and are developing plans to implement these across Education. First, Mendick and Harvey's and Rivers' work demonstrates the potency of online media and social networking in communicating research findings to new audiences and fostering engagement with governments, quangos and the creative

sector. We will organise training on online communication to support staff in using key networking tools such as *Twitter* and *YouTube* that are popular across our key user groups (including with young people) and with policymakers and journalists. Second, taking inspiration from Koshy's research, we are developing advice for staff on building relationships with charitable bodies and key politicians. For example, Koshy has been involved in developing the government's National Quality Standards for teaching Higher Ability students and has served as a member of the Department for Education group promoting Design Research methodology. Third, the worldwide media attention generated by Rivers', Crowe's and Watts' work exemplifies Brunel's objective of advertising its research excellence on the international stage. Responding to changes across the research funding landscape, our focus is now on larger-scale interdisciplinary projects that can maximise impact. A recent successful AHRC bid (Ellis with colleagues at Birmingham [English] and Reading [Psychology]) provides one such example of future directions.

d. Relationship to case studies

The BACE Centre and its Urban Scholars Programme, led by Koshy, has a policy of involving users at all stages of research: planning, delivery and post-interventions. For example, parents have been included at the planning stage of interventions. Casey and Koshy's action research projects planned for increased impact by the teacher-researchers by communicating their experiences and theories to larger local audiences through three books: *Action Research for Improving Educational Practice*, *Unlocking Mathematics Teaching* and *Action Research in Healthcare*. The team have produced a Toolkit of research-informed resources and exemplar evaluation models, including an innovative model of tracking student trajectories for users, which they have distributed through conferences and online, in part supported by HSBC.

Rivers' work on homophobic bullying and bystander behaviour has been based on collaborations with local authorities and school communities. Working with colleagues, he has produced reports to support developing anti-bullying strategies in the UK and internationally. Key publications with resources for teachers, parents and researchers internationally include: *Bullying: A Handbook for Educators and Parents*, *Homophobic Bullying: Research and Theoretical Perspectives* and *Bullying: Experiences and Discourses of Sexuality and Gender*. Scientific outputs from Rivers' international group have influenced US policy through his participation in an expert panel sponsored by the Centers for Disease Control and Prevention and the Department of Education that developed a federal definition of bullying. Rivers' work on bystander behaviour has been cited by the US Secretary of Education as an indicator of the need to take a whole-school approach to challenging bullying in US schools. Additionally, this work is now being used in programmes delivered by Holocaust Education Centres in the US to further our understanding of the trauma associated with observing the persecution of others.