

## Unit-level environment template (REF5b)

<b>Institution:</b> Durham University
<b>Unit of assessment:</b> 23 Education
<b>Section 1. Unit context and structure, research and impact strategy</b> <p>Durham University's School of Education (SoE) comprises 35.15 FTE Category A staff, approximately 143 PGRs, and over the course of the REF period, has attracted more than GBP37,900,000 in research grants and income. Guiding the SoE's research activity is our vision of a more equitable world in which education, informed by innovative high-quality research, plays a vital role in enabling individuals, communities and societies to flourish. To this end, our current research and impact strategy, which builds from our 2014 submission, has enabled us to undertake research over the course of the REF period that: 1) positively impacts on regional, national and global policy and practice; and 2) shapes and develops educational research, research methodology and research capacity in the UK and internationally. We have succeeded in meeting these objectives by: maintaining a vibrant, intellectually inclusive research environment, in which staff are passionate about their research and the difference it can make; securing prestigious research funding to enable us to pursue boundary-pushing research in a sustainable way; publishing innovative and distinctive high-quality open access outputs; further embedding world-leading impact; and developing research collaborations and partnerships within and beyond education. Evidence of how we have excelled in these areas is provided in Sections 2-4.</p> <p>Looking forward, our research strategy for the next 5 years will enable the SoE to continue working towards our research vision. This will be achieved through the following actions:</p> <ul style="list-style-type: none"><li>• Continuing to conduct internationally excellent research which both advances the state-of-the-art and has a positive impact on individuals and organisations;</li><li>• Creating a knowledge-base that provides evidence to facilitate effective decision-making in education, both in terms of policy and practice;</li><li>• Developing all staff (experienced academics and Early Career Researchers/ECRs) across the full range of research skills and competencies, while ensuring that they continue to work in a flourishing, nurturing research environment; and</li><li>• Continuing to build a sustainable research environment both in terms of funding (e.g. by investing in new research centres) and in how we link research to teaching, thus inspiring our students to become the future architects of an equitable world within the School, academia and beyond.</li></ul> <p>Furthermore, the SoE's newly developed internationalisation strategy will extend our external engagement and increase: 1) our numbers of international PGRs; 2) our international partnerships, enabling increased international mobility for both staff and students; 3) research and scholarship networks, which benefit teaching and research activity; and 4) our ability to recruit the highest calibre academic staff.</p> <p>Research in the Education Unit of Assessment involves staff in the SoE and (until July 2019) staff from the <i>Centre for Evaluation and Monitoring</i> (CEM). Education research at Durham is interdisciplinary and international, with research collaborations drawing in staff from the <i>Wolfson Research Institute for Health and Wellbeing</i>, disciplines such as Geography, Psychology, Sociology, Computer Science, Business, the N8 research partnership, the Russell Group, the European Coimbra Group and the global Matariki network. We are committed to maintaining breadth and excellence across our areas of expertise; and since 2014 have restructured the organisation of our research expertise so that academic staff and PGR students are aligned to one or more of six thematic <i>Research Clusters</i>. These clusters serve as umbrellas under which various, more specific research topics, are addressed. Each has a sufficient number of affiliated members of staff to allow fruitful collaboration within and between clusters. Although staff and students may be affiliated with more than one cluster, the cluster</p>

structure influences our recruitment strategy, guides our selection of PGR students and supports the design, organisation and delivery of teaching, ensuring our research and teaching activity is strongly aligned. Cluster membership also extends beyond the SoE, both reaching out across the University and across the extensive international networks of the SoE. As a result, the cluster approach has strengthened the School's ability to collaborate widely and in an interdisciplinary way. Our commitment to inclusive and boundary pushing research means our clusters support a variety of research types (from applied research to more theoretical/'blue-skies' research). Clusters also cover a wide spectrum of educational research areas and phases, reflecting the diversity of the nature of educational research in general, but also the breadth of research expertise represented within the school.

Further detail on each cluster is provided below:

#### *Assessment, Evaluation and Educational Effectiveness*

The scope of this thematic cluster encompasses research across the stages of assessment development and implementation, monitoring and educational effectiveness. Research interests pursued in this cluster relate to many aspects of assessment development, including understanding constructs and innovative approaches to collecting reliable and valid measurements. The Centre for Monitoring and Effectiveness (CEM) has played a prominent role in delivering pupil monitoring systems to schools in the UK and internationally, providing information to inform teachers' practice and improve educational outcomes. Although CEM was sold to Cambridge Assessment in June 2019, the unique longitudinal datasets produced through its monitoring systems, the National Pupil Database and other large-scale datasets, have enabled members of the cluster to undertake a range of innovative studies of educational effectiveness. For example, the international study of children starting school and progress during their first school year (*iPIPS*; international Performance Indicators in Primary Schools (Tymms and Merrell)) continues to be a successful research project. Some 32 members of staff are primarily affiliated with the Cluster.

#### *Durham University Centre for Evidence in Education (DECE), (Policy and Practice)*

This cluster is also a well-established University Research Centre, with members from other social science departments, and a national and international user group. Its work involves generating, assessing, synthesising, critiquing, and promoting robust evidence to help inform education policy and practice. DECE policy evaluations funded by the ESRC include examinations of the impact of long-term disadvantage on segregation and the poverty attainment gap, and the recruitment and retention of teachers. Evaluations of a wide range of classroom interventions have been conducted, and DECE members have been influential in embedding the use of Randomised Controlled Trial (RCT) methodology, systematic reviews, and meta syntheses within education (e.g. the work of Coe, Cramman, Gascoine [ECR], Gorard, See, Siddiqui, and Torgerson). An exemplar here is the Teaching and Learning Toolkit (Higgins), an evidence-based resource for schools supporting improved outcomes for learners, particularly those from disadvantaged backgrounds. The toolkit guides the work of the Education Endowment Foundation and its funding strategy for the GBP200,000,000 being spent to reduce inequalities in school outcomes in England. Another is the evaluation of the Department for Education (DfE) and NESTA-funded EdTech Testbed (described further in section 3 below). 22 members of School staff are primarily affiliated with this Centre.

#### *Higher and Further Education*

The Higher and Further Education cluster explores issues such as policy and governance, assessment and learning, and widening participation within the Higher and Further education sectors at local, national and global levels. This encompasses a broad spectrum of issues and approaches, theories and ideas for addressing the political, social and policy contexts in which Higher and Further Education works, and the students, academics, senior leaders, policy makers, and employers who are involved. Examples of SoE projects sitting under this thematic umbrella include the ERASMUS+ funded projects: *Development, Assessment and Validation of Social Competences in Higher Education* (Rattray and Raaper); and *Intercultural Reflections on (HE) Teaching*

(Reimann). Another recurring theme of this cluster's work has been widening participation in HE, and a series of studies funded by ESRC and the Scottish Funding Council has provided a basis for stronger and wider use of contextualised admissions by the Office for National Statistics (ONS) and the Scottish Government (Gorard and Siddiqui, with Boliver from Sociology). 12 members of staff are affiliated with this cluster.

#### *Educational Psychology*

Research in this area uses a psychology focus to examine learning and development. It encompasses a range of work, including complex problem solving, learning ability, Dynamic Testing, cognitive flexibility (e.g. J. Beckmann), dyslexia (Elliott), dynamic personality (N Beckmann), affective and motivational underpinnings of learning and academic achievement (Lichtenfeld and Rattray) and the acquisition, transmission and evolution of cultural behaviours (Flynn). Current projects undertaken by cluster members include: *UKCAT Research Capacity Building*, which is exploring ways to implement aspects of Dynamic Testing into the UK Clinical Aptitude Test (UKCAT), enabling the assessment of cognitive flexibility and learning potential. Cluster members also lead the Australian Research Council Discovery Project: *Task Contingent Units of Personality and Adaptive Performance*, together with the University of Technology, Sydney and the University of Washington. 8 members of staff are affiliated with this cluster.

#### *International and Comparative Education*

Research in this cluster draws together expertise from the extensive and varied international dimensions of educational research from across the SoE. In particular, the cluster engages with methodological, epistemological and theoretical projects, which advance understanding of educational issues through international and comparative lenses. Educational, socio-linguistic and geo-social inequalities are central to the synergies of this group, including explorations around relational educational inequalities between the 'Global North and Global South'. Prominent funded projects undertaken by cluster members include *Here To Stay? Identity, Belonging And Citizenship Among Eastern European Settled Migrant Children in the UK* (Moskal); supported by a grant from ESRC Centre for Social and Economic Research on Innovation in Genomics; *Researching Multilingually* and *Researching Multilingually at the Borders of Language: the Body, Law and the State* (Holmes), funded by AHRC, *Developing the impact of dialogic STEM education in Mexico and the UK: from local communities to international policy* (Montgomery) (Newton and British Council) and *The Chequered History of British University Engagements with Chinese* (British Academy), which explores the factors influencing changes to Chinese Language Studies in university curricula (Holmes and Jin). 21 members of staff are affiliated with this cluster.

#### *Pedagogy and Curriculum*

Research at the heart of the Pedagogy and Curriculum cluster provides insights into how to encourage best practice in a range of educational contexts. This includes teaching and learning across curricula, teaching and learning within specific areas of cognitive and affective activity, and teaching and learning across educational phases. One of the major projects directed by cluster members is *The Durham Commission on Creativity and Education* (L Newton, D Newton), a collaboration between Arts Council England and Durham University. The aim of the commission is to identify ways in which creativity and creative thinking can play a larger part in the lives of young people from birth to the age of 19 (both within and beyond the education system). Another major cluster project is *Transforming the Pedagogy of STEM Subjects in Ethiopia* (Kind) which has highlighted gaps between intended and attained curriculum, prompting national, regional and organisational science education policy debates. The cluster comprises 13 members of staff.

**Strategic direction for SoE research** is provided by the *Director of Research* (DoR), who is a member of the SoE's *Management Committee*. Building on the last REF, the DoR is now supported by a Deputy Director of Research and a further team of five, whose roles correspond to key areas of the research environment we wish to maintain and continue to

strengthen, specifically:

- 1) An *Impact Co-ordinator*: with a remit to maximise the benefit of the School's research more widely;
- 2) The *Chair of Ethics*: responsible for research integrity via the SoE *Ethics Committee*, overseeing the ethics application processing system and managing the ethics decision process;
- 3) An *Environment co-ordinator*: who is responsible for key elements associated with the SoE's research environment (e.g. visiting scholars; the research seminar programme, research cluster-related events, PGR and ECR involvement/inclusion in school activities, training and mentoring needs).
- 4) The *Director of Postgraduate Research*: who, along with the PGR Committee, has responsibility for admissions, progression and processing students through to completion as well as the alignment of student interests with the key research foci of the School.
- 5) A *Grant Co-ordinator*: who, working with the *Research Administrator*, oversees grant opportunities and activity in order to both match grants with academic staff and find suitable funding outlets for the innovative research ideas generated by our academics. The grant co-ordinator also supports Early Career Researchers with the grant writing process.

The DoR is also supported by our *Research Committee* (RC) whose membership comprises the DoR, deputy DoR, the Chair of the Board of Studies, Director of post-graduate research (DoPGR), and one nominated representative of each Thematic Cluster. The SoE is part of the Faculty of Social Sciences and Health and the DoR and DoPGR are members of their respective Faculty Committees. The Faculty Research and Education Committees also provide opportunities for the SoE to link into the strategic coordination of research at faculty and university level.

It is through the *Research* and *Ethics Committees* that the SoE supports a culture of research integrity and ensures that research is conducted according to appropriate ethical, legal and professional frameworks, obligations and standards. At the SoE, we have implemented a robust ethics approval process to deal with the (approx.) 370 ethics applications we receive each academic year from UG, PGT, PGR students and staff. All applications, not identified as low-risk, are reviewed by at least one member of the ethics committee and constructive feedback is provided to facilitate learning, and to foster a supportive research culture. Selected applications are discussed amongst all committee members at one of our termly ethics committee meetings. The committee also includes those involved in teaching Research Methods at undergraduate and/or postgraduate level, thus ensuring emerging issues directly inform our research methods provision. Reports from the Ethics Committee are shared at the Research Committee and reported at Board of Studies meetings to enable lessons to be learned with the aim of continually improving standards. In 2018/19 we reviewed our ethical procedures to ensure they aligned fully with GDPR requirements. We also successfully transitioned to the University online ethics application system. The transition period was supported by highly attended and well received training workshops for staff and supervisors.

As highlighted in Section 3, several academic staff in the SoE use secondary datasets in their research, many of which include sensitive data. All staff are required to undertake data protection training and follow the Institution's research integrity policies, as well as their own professional bodies' research and ethical guidelines (mainly the British Educational Research Association [BERA] and the British Psychological Society). We have many staff who are Secure Research Service (SRS) trained, and one area of the School is designated a safe area for ONS Secure Research Service (SRS) and Secure Lab work, enabling researchers to access confidential and restricted data.

The SoE promotes an open research environment. All academics deposit research outputs and datasets on the Durham Research Online Portal, and empirical research projects also have data management plans to ensure good practice and compliance with GDPR. We have

also been instrumental in developing the Education Endowment Foundation Archive and its new location in the ONS Environment as a publicly accessible archive of its trial data, linked to the National Pupil Database.

As noted earlier, our six thematic *Research Clusters* provide a vibrant collaborative environment and an organisational structure for the alignment of research and impact, scholarship and teaching. The activities within each cluster are coordinated and overseen by a representative (a Cluster Lead) who can be peer nominated or recommended by the Head of School. This organisational structure distributes responsibilities, while also providing the freedom for research foci to evolve and the flexibility needed to support a range of collaborations. The role of Cluster Lead is not exclusively reserved for the Professoriate, with less senior staff often taking on the role, enabling them to gain experience within a supportive environment and to build leadership capacity for future sustainability.

Cluster leads are responsible for the following activities (and hold a GBP500 annual budget to facilitate them):

- 1) Organising and chairing termly meetings of their cluster;
- 2) Acting as a point of liaison between their cluster and the SoE Research Committee;
- 3) Encouraging the development of collaborative activity within their cluster, including bid applications, the writing of outputs and impact-related activity;
- 4) Collaborating with other cluster leads to share good practice and develop inter-disciplinary research activities; and
- 5) Contributing to the SoEs research seminar series by organising and supporting members of the cluster to present research and organising and hosting invited speakers from other universities.

During the Covid-19 pandemic, cluster leads did exceptionally well to maintain our environmental activity, ensuring that activities such as research collaboration and seminars continued on-line, while also establishing new innovative activities such as a virtual writing retreat.

## **Section 2. People**

### **Recruitment, promotion, equality and diversity.**

We view our vibrant and sustainable research environment as a direct product of the focus we place on our staffing policies:

*i) Recruitment:* Members of appointment panels receive recruitment and selection training, including on equity and diversity. Successful candidates for academic posts must have demonstrated research success, including research outputs that are considered at least 3\* quality in REF terms. In the time period from January 2014 to September 2019 the school was able to appoint 15 academic colleagues (accumulating to 15 FTE). Of these, 12 were appointed at G7/8, 1 at G9, and 2 at G10 (thus consolidating our professoriate, with the recent appointment of Brown and Montgomery serving to support the DECE and ICE research clusters). Of these appointments, 14 were female. Furthermore, 2 colleagues transitioned to an academic contract from a teaching only contract, and 2 transitioned from a research only contract. We see this as evidence of the SoE's approach to merit-based mobility. As an outcome of the school's success in attracting competitive grants, a total of 34 colleagues were recruited on research contracts (25 female). These recruitments include the closer integration of 4 colleagues on research-only contracts from CEM, as a result of the recent restructuring of the links between CEM and Durham University.

*ii) Probation:* Newly recruited academic staff are supported in becoming an active part of our research culture through two main strategies: 1) new members of staff, especially ECRs, have a protected reduction in their teaching workload (this is explained in section vi below), and 2) new staff are also supported with research-related training and mentoring.

*iii) Promotion:* The University has now moved to an annual promotion round system which involves the mandatory participation of all academic and teaching staff, based on transparent

and well communicated promotion criteria. This approach mitigates the risk of inequity in career progression, especially with regard to a potential under-representation of female mid-career academic staff. In the current REF period, 20 staff on academic posts have been promoted (11 from G7/8 to G9, 10 of which were female; 5 from G9 to G10, 3 of which were female; and 4 were promoted within the professorial bands, with 2 of these being female). The SoE also has a healthy cohort of early career academics/researchers (9% of academic staff are within 5 years of PhD completion) and University policies ensure the SoE exceeds the expectations of the national *Concordat to Support the Career Development of Researchers*.

*iv) Equality and Diversity:* The SoE represents a diverse academic environment, with at least 15 different nationalities represented across academic and research staff. Of Category A staff declaring ethnicity, 19% are BAME. Furthermore, 62% of Category A staff are female. The school recognises the vital role that equality, diversity and inclusion (EDI) play in sustaining our research environment and in supporting the generation of innovative lines of inquiry. In order to achieve such a culture, we follow the University's EDI policies (the University is part of the Stonewall Diversity Champion programme and holds the Two Ticks Positive About Disabled People award). In common with other schools/departments within the University, the school is also working towards a departmental Athena Swan Bronze award. The departmental *EDI committee*, chaired by the deputy head of the School, includes within its remit a consideration of research work and environment in the widest sense. All research-active staff, as well as postgraduate research students, are represented on the EDI committee. The purview of the committee ranges from the discussion of University-wide processes such as equality and diversity staff training and sub-conscious bias training, to more pragmatic issues at school level, such as ensuring equitable access to conference and travel funds for all eligible staff. Also key is ensuring equitable access to opportunities for research training and mentoring, the representation of early-career as well as professorial staff on relevant committees (Ethics, Research, Research Cluster) and the timing of research seminars to ensure they are accessible.

The School also provides research capacity for the University to build the evidence base for EDI initiatives. For instance, Siddiqui led an Office for Students funded study on assessing the patterns of Hate Crime and reporting attitudes. The findings of this large survey resulted in both a framework and reporting mechanisms for hate crime and sexual violence in the University. Siddiqui is also leading the evaluation of the EPSRC Inclusion Matters project: a GBP5,000,000 initiative to promote inclusion of underrepresented groups in academia. These two projects are leading exemplars of promoting EDI initiatives.

*v) Support and Development:* Research activity in the SoE, including grant management, is supported by the *School Research Office* (SRO). The team, comprising 2 members of staff (1.8 FTE), is led by a senior research administrator. The work of the SRO is integral to the creation and sustainability of the School's research environment. For instance, the SRO engages seamlessly with the University's Research and Innovation Services and the DoR's research grant coordinator to support research grant development and post-award grant management. The SRO supports the environment coordinator to provide a lively research seminar programme and in planning and providing support for our visiting scholars, fellows and professors. The SRO also manages the processing of ethics applications and works with the DoR to monitor research income, projects, outputs and impact activity.

A key element of our strategy has been to ensure that staff have the appropriate skills, opportunities and environment to conduct their research. The essential elements of this are explained below.

*vi) Making space and time for research:* our workload policy provides academics with the time to conduct research and to enable them to produce high quality outputs and, where appropriate, create societal impact. During the course of the current REF period we transitioned from a 20:60:20 (Research: Teaching: Citizenship) ratio to a model that is internationally more competitive for research intensive institutions: 40:40:20. Our workload

policy also allows strategic flexibility to accommodate additional research time for externally funded research and awarded fellowships. Probationary staff are given a reduced teaching load and a higher proportion of research time allocation (50% instead of 40%), which enables new academics (and ECRs in particular) to meet the ambitious probation criteria, but also facilitates their integration into the School's research culture. Effective mentoring, not just for probationary staff, is instrumental to achieving this strategic objective.

*vii) Research Leave:* Under University policies, after each seven terms served, academic staff are eligible for one term's leave to focus exclusively on research. In the current REF period, 19 staff in Education have had a total of 28 terms of research leave. Opportunities for research leave have been equitably utilised by staff across all levels of seniority (G7/G8: 7 members of staff [46% at this grade]; G9: eight [89%]; and G10: four [27%]). From 2019/20 onwards, the arrangements for planning research leave have changed from an opt-in to an opt-out principle. All academic staff will be assigned a period of research leave on a 'rolling timetable' and are expected to take this up (subject to submitting a plan for how leave will be used, which should relate to support for developing more ambitious grant applications, the development of high-quality outputs, or plans to enhance impact). This allows better advance planning and will also enable teaching and administration activities to be effectively covered to maintain a high-quality service to students and to the department, and to mitigate the potential burden of staff returning to a 'backlog' of duties at the end of their term of leave. Changes to planned research leave can be requested by academics who prefer, for strategic reasons, to consolidate their accumulated research leave allowance into a longer period of two or three terms on a less frequent basis. Proposed and achieved outcomes are monitored by the SoE's Research Committee.

*viii) Visiting scholars and fellowships:* Over the current REF period, the SoE has hosted 24 visiting scholars, both from the UK and abroad, and from institutions including: Beijing Normal University, China; the Federal University of Viçosa, Brazil; Federal University of Rio de Janeiro, Brazil; the Autonomous University of Madrid, Spain; Technical University of Kosice, Slovakia and from Washington State University, USA. We have also been successful in attracting Marie Curie Fellowships and Santander mobility grants to support our visiting scholar programme. A number of visiting scholars have gone on to apply for funding with Durham staff; with one (Demie) subsequently made Honorary Professor in the School. The SoE also encourages its staff to seek scholarships and fellowships in the UK and abroad, with recent examples including: Professor Stephen Gorard, awarded a Visiting Distinguished Professorship at Zhengzhou University, China; Professor Carole Torgerson hosted as a visiting scholar by the National Social Research Centre for Denmark; Dr. Oakleigh Welply, hosted by the Observatoire Sociologique du Changement at Sciences Po, Paris; Professor Chris Brown, who was awarded a Stiftung Mercator Foundation Senior Fellowship (personal award of EUR55,500 (04-2018)) and hosted by the University of Duisburg-Essen; and Professor Ray Land (Emeritus Professor) who was made Gambrinus Fellow (funded by Dortmunder Sparkasse Credit Bank) and hosted by Technical University of Dortmund, Germany. Professor Steve Higgins also holds the Education Endowment Foundation's Inaugural Professorial Fellowship, which has enabled the school to appoint Dr Xiaofei Qi for two years in a capacity-building post; and Professor Catherine Montgomery holds a visiting Professorship and has longstanding links at the Centre for Higher Education Internationalisation, Università Cattolica del Sacro Cuore, Milan.

*ix) Enhancing performance and planning for the future:* Staff development is a prominent part of our strategy, and the SoE has an academic mentoring system in place, in which academic staff of all grades are encouraged to participate, as both mentors and mentees. Individual training needs and opportunities are discussed through the mentoring arrangement, research plans and outputs are peer reviewed and formative feedback provided. Staff are invited to select their own mentors with the aim of encouraging a comfortable and supportive development environment. The school's Early Career Researcher group is also designed to support ECRs by identifying both their development needs as well as training and other support to address these (with funding provided to enable access to training).

### Doctoral Training and Postgraduate Research Student Development.

The SoE has a vibrant and successful doctoral programme, with an international student body representing 31 countries across 5 continents. Our PhD programme is research-based, requiring the submission of an original thesis and examined by *viva voce* with external and internal examiners.

Since the previous REF, we have awarded over 20% more doctorates. As indicated in the table below, of the 143.40 (fte) doctoral awards made since 1<sup>st</sup> August 2013, 49% were PhDs (N.B. Figures might differ slightly from HESA data due to transfer of staff between Departments and classification changes). A total of 15 doctoral awards were made to students on our overseas programmes (all EdD). Annually we secure an average of four ESRC-funded Doctoral Scholarships.

#### Doctoral Degrees awarded (fte):

	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	Total
<b>Academic PhD</b>	4.55	10.20	10.85	15.20	4.00	13.60	12.00	70.40
<b>Professional (EdD)</b>	12.00	14.00	7.00	10.00	13.00	13.00	4.00	73.00
<b>Total</b>	16.55	24.20	17.85	25.20	17.00	26.60	16.00	143.40

Research students benefit from the wide range of research undertaken in the School and the variety of expertise represented across our Research Clusters. They attend and actively participate in the SoE's weekly research seminars as well as cluster meetings. PGR Students present their developing work in both public and peer meetings, including the SoE *International Summer Postgraduate Institute*. A PGR fund of up to GBP400 per student per year (with top up available) supports active participation at conferences. Over the course of the current REF period some GBP49,500 has been accessed, enabling more than 170 PGR students to present at key national/international conferences including those run by AERA, BERA, *The British Psychological Society*, EERA/ECER, as well as more specialised congress such as the *European Association for Research on Learning and Instruction*.

Supervision and monitoring are conducted according to the national *Researcher Development Framework* and the *QAA Code of Practice*. A PGR Committee constituted by all supervisors, with elected student representatives, supports and monitors PGR students. It shares good practice and reflects on and monitors the PGR student experience. Each supervisory team has at least two staff members. Every student and supervisory team separately report on progress at nine and 21 months of the first two years of full-time doctoral work. A formal progression panel independently assesses first-year students' readiness to progress to their second year, using a combination of these reports, a student presentation and an interview. All PGR students also complete an annual review for the Deputy Head of Faculty (Postgraduate), which includes a review of their supervision and research environment. Each PGR student is a member of one of the University's Colleges, which provides them with pastoral support. We also ensure that all students receive excellent research-related support and training, and understand they are valued and integral members of our research community.

We encourage supervisors to work with students so that journal publications and monographs result from their studies. Over the current REF period this has led to 66 research outputs directly relating to doctoral work being published in a wide range of SSCI outlets. More can be done here, and plans to support our PGRs further include: 1) better linking the research training offered to PGRs to the University's new Research Methods Training Centre; 2) establishing a PGR curated website in which research related questions are asked and resources shared (e.g. YouTube videos on statistical techniques) in order to create a community that can self-help; 3) arranging more joint research presentations with PGRs and



staff rather than the separate model that is more common currently; and 4) the lecture capture of research seminars, hosting these and promoting them more widely via Twitter.

### Section 3. Income, infrastructure and facilities

To date, the SoE has attracted more than GBP37,900,000 of research funding this REF period; equivalent to approximately GBP1,000,000 per FTE. Of this, the most significant contribution came from the Assessment, Evaluation and Educational Effectiveness cluster's distributed research network, accounting for GBP25,000,000 of the income recorded during the current REF period. Since 2014 we have adopted a strategy of both expanding and diversifying our research income, with major funders now including national and international research councils (e.g. ESRC, AHRC, SSHRC, ARC, British Academy), the UK government, UK charities (including the Education Endowment Foundation and Nuffield Foundation), the EU (e.g. Erasmus), as well as UK industry, commerce and public corporations (e.g. NESTA). We are also establishing and funding new research centres of expertise (e.g. DECE), who are expected to grow their income and outputs substantially. This diversity of funding sources is indicative of the range of topics our researchers specialise in as well as the innovative and rigorous way in which we engage in research activity.

During the current REF period, our income has increased by more than 17% in comparison to the previous REF cycle (GBP31,000,000: itself a 20% increase from the REF2008 period). This coincides with the SoE's deliberate move towards an ongoing but sustainable approach to research income growth which has enabled us to pursue two objectives: 1) developing a research programme that positively impacts on national and global policy and practice; and 2) shaping and developing the educational research agenda and research capacity both in the UK and abroad. In terms of the first of these aims, SoE staff have been influential in formalising the use of RCT methodology, systematic reviews, and meta syntheses to help policy-makers teachers, school and school system leaders understand what practices are most likely to improve outcomes for students, including the most disadvantaged. For instance, the SoE is recognised as an evaluator within the framework of both Education Endowment Foundation and the new Youth Endowment Fund. We have been particularly successful in achieving our goals in this area, with income amounting to over GBP4,000,000, over the course of the current REF. Other examples of how our research-income strategy has enabled us to realise our objectives during the 2014-2019 period, include:

- iPIPS (international Performance Indicators in Primary Schools): a new project which takes as its basis, the well-established PIPS Baseline and Follow-up Assessment (originated by Tymms in 1994 and further developed by Merrell). Numerous funded cultural adaptations/translations means that iPIPS has now been used in South Africa, Russia, Brazil and Lesotho to assess what children know and can do at the start of school and the progress that they make during their first school year. iPIPS research and the impact arising from its use are detailed in an SoE impact case study. At the same time, it is instructive to note that in 2014, Tymms and Merrell were invited to the 38th PISA Governing Board meeting to outline the iPIPS project, with work on the project subsequently leading to Andreas Schleicher, the Director of Director for Education and Skills, and Special Advisor on Education Policy to the Secretary-General at the OECD, commenting in a letter to Tymms that, 'The developments you have led in the field of early learning assessment are significant. In particular, this work has contributed to a growing emphasis on the importance of children's development in their early years, as well as the critical need for reliable and valid data to inform policy and practice' (12/02/18). Merrell was also invited (January 2019) to present evidence for the Standardised Assessment Inquiry, Education and Skills Committee, Scottish Parliament on iPIPS.
- SoE staff working in the area of evidence for policy and practice in education set up a new seedcorn funded University research centre: the *Durham University Centre for Evidence in Education (DECE)*: <https://www.dur.ac.uk/dece/> (e.g. Gorard, See,

Siddiqui). By concentrating expertise in this area, DECE have managed to secure funding for two major systematic reviews on the use of evidence, and two major bids for external funding in order to advance the understanding of two key policy/practice areas: a GBP387,533 ESRC grant to look at teacher supply; and a GBP625,000 testbed grant from NESTA (The EdTech Innovation Testbed) (See, Higgins, Siddiqui, Gorard, Torgerson), which is designed to support the identification and scale-up of effective practices. Specifically, the testbed works by helping schools and colleges try out promising technology products for free, while an independent evaluation finds out what works best for students and teachers as well as whether the overall testbed approach works. The 'product' areas covered by the EdTech include approaches to support teachers with formative assessment and essay marking, parental engagement and timetabling.

With regards to our second aim of shaping and developing educational research and research capacity, our funding strategy has also enabled us to pursue boundary pushing and multidisciplinary research across all of our clusters. In particular, we have sought to secure funding that enables us to utilise new methods and change perceptions about current issues. Examples include:

- Innovative research in the area of *Assessment, Evaluation and Educational Effectiveness*, such as Merrell and Tymms' exploratory pilot research, which used animated illustrations to assess personality in school children under the age of 10, an age-range which has previously been considered to be too young to assess with more traditional rating scales (funded by England's Department for Education: GBP11,920).
- To advance the state-of-the-art in evaluation, Seedcorn funding has been secured in two grants, one led by Brown and one by Cramman, to explore the possibilities of using machine-learning approaches to analyse when teachers and students are engaging in reflective problem solving and assess whether the occurrence of reflective problem solving corresponds with changes in both teaching and learning outcomes.
- Analysis undertaken by SoE staff working in the area of evidence for policy includes the widely publicised work by Gorard and Siddiqui, which has shown that the relative 'failure' of schools in the NE is an illusion, which affects how schools in the area address low attainment, as well as the widening participation to HE agenda (e.g. this story was picked up in the *Times Education Supplement* and *New Statesman*). Furthermore, their paper on the effectiveness of grammar schools published in the *British Journal of Sociology of Education* 2018 is the most read and discussed paper ever in the journal. Two 'landmark' papers by DECE members were also selected in 2015 to celebrate 30 years of Research Papers in Education.

Investment in staff to support funding bids and the management of research project income feeds into our strategy for sustainable growth and the generation of future research grants. Support from the School's own research office and research grant coordinator provides targeted information to staff about funding opportunities, and our adoption of Worktribe has streamlined the application costing process. Sustaining existing partnerships and research collaborations and developing new ones are central to our integrated approach to research and impact.

Staff are also well supported in initiating and evidencing the societal impact of their research through a number of mechanisms. These include: 1) funding to support impact activities: within the current REF period impact funding is currently in the region of GBP208,000 (GBP92,000 RIF/seedcorn-impact; and GBP116,000 ESRC IAA); 2) PGR-student support. Here the SoE impact co-ordinator manages two PGR-students who work closely with impact leads to offer support in gathering existing and emerging evidence of research impact and in further developing effective engagement strategies with relevant stakeholders. This includes activities such as: performing regular searches of various sources, such as the internet, media and social media, blogs, policy and other documents for evidence of research impact; monitoring

research websites; regularly updating and storing information on engagement and impact using existing databases; contacting external stakeholders for the purpose of gathering evidence of impact; collecting testimonial evidence; and supporting academics in the development of impact materials; 3) Close and effective working relationship with the DU policy impact and engagement team as evidenced, for instance, in two successful and well received collaborative impact stakeholder events, one hosted at Durham University (2018, 114 participants) and one in London (2019, 320 participants). We have also held two successful *ESRC Festival of Science* events in the North East, and participated in *Evidence Week in Parliament* in 2019.

**To support existing work and to instigate new research** we have implemented processes for the strategic (re-)investment of incentivisation funding the SoE receives as a result of success in attracting external research funding. Our current strategy involves three approaches: 1) PIs of successful grants receiving a proportion of secured funds to support, for instance, the development of research staff working on their projects; 2) a further proportion targets the SoE as a unit by providing every research-active member of the school with GBP1,000 annually to cover individual research-related costs, including but not limited to, active participation at conferences or travel expenses to initiate research collaborations; and 3) the school also holds a small budget dedicated to strategically supporting initiatives directed towards developing new research and fostering a productive and outcome focussed research climate at the SoE. Examples of such activities include workshops for grant writing, subsidising individual staff members' attendance at important international conferences, and supporting collaboration meetings to enable preliminary discussions about ideas for new research projects. This may include inviting collaborators to Durham or for SoE colleagues to visit collaborators. SoE staff are also encouraged to apply for Seedcorn funding to kick start research grant applications (GBP94,500 awarded).

#### **Section 4. Collaboration and contribution to the research base, economy and society**

**Collaborations:** We see interdisciplinary collaborations are a central feature of our education research and research strategy: such collaborations are key to supporting the production of innovative and distinctive research of the highest quality, for finding creative ways to tackle pernicious problems and for developing partnerships. Below we give examples of our interdisciplinary collaborations, including active engagement with the *Institute for Advanced Studies (IAS)*, an organisational structure that brings together world-leading researchers from all disciplines to work with Durham colleagues on collaborative projects of major intellectual, scientific, political and practical significance. During the 2014-2020 period, the SoE has hosted three IAS fellows: Prof Dennis Beach, a renowned sociologist from the University of Gothenburg; Prof Robert Wood, a psychologist and eminent management scholar from the University of New South Wales; and Dr Tomas Zelinsky, an expert on disadvantaged European Roma communities, from the Technical University of Kosice.

Further examples of collaborations, nationally and internationally, are the 12 honorary professors and honorary fellows associated with Durham's SoE. These include leading international academics (e.g. Professor Andreas Demetriou, esteemed psychologist and former Minister for Education in Cyprus; Professor Eckhard Klieme, Director of DIPF, the Leibniz Institute for Research and Information in Education and influential in the development and analysis of the OECD's PISA survey; and Professor John Hattie whose meta-analyses and research into educational monitoring and feedback have influenced education policy in many countries). These, along with other honorary and emeritus professors, have contributed to the research environment through collaborations on research projects, research outputs, strategic advice and research seminars.

Indicative of the interdisciplinary perspective researchers at the SoE take is their association with the Wolfson Research Institute for Health and Wellbeing (WRIHW). The WRIHW supports a community of over 150 Fellows, of which 17 are from the School. SoE Wolfson fellows have benefited from GBP14,095 of funding since 2014, as well as being members of 15 Research

Centres and nine Special Interest Groups (SIGs). These centres and SIGs have the express purpose of bringing together academics that can define a current problem and its scope for individuals and society, and build upon the evidence base to devise a way forward to address the issue. Such groups involve academics investigating topics that range from the biological behaviour of individuals, to the development of evidenced 'fit for purpose' interventions and policies required to effect societal change.

In the following we provide further examples for how the SoE's academic staff are engaged in research-cluster related collaborations, networks and partnerships, as well as how the work of these clusters has contributed to the national and international research base and the positive impact of our research on the economy and society.

#### *Assessment, Evaluation, and Educational Effectiveness*

The collaborative deployment of monitoring systems in schools in the UK and internationally by members of the cluster led to a total number of 3,815,265 pupils being assessed at various time-points in their education between the ages of 3-18. The assessments have been used in several evaluations of educational interventions and the related longitudinal data analysed and results reported in more than 20 research outputs, with authors comprising academics both in the SoE (Tymms, Merrell, Cramman, Gray, Gott, Little and Copping) and beyond (including from Brazil, Russia, South Africa, Australia, New Zealand, Germany and Cyprus). Other activity under this umbrella include the UK's Rasch User Group, established by Tymms over ten years ago and which continues to be active (<http://www.rasch.org.uk/>). The group meets once a year to share research and discuss advances in methodology and application; making use of longitudinal data to study the long-term educational trajectories of students, and cross-sectional data to study trends over time, including the effectiveness of local interventions through to national policies. For example, using assessment data linked to the National Pupil Database, Tymms, Merrell and Bailey (2018) published an analysis of children's progress between the start of primary school and GCSE results at age 16. Their finding that the academic gain of attending an effective Reception class is still evident at the end of secondary school has important implications for teacher training and the placement of effective teachers in the early years of education. International collaborations with Luytens (University of Twente, Netherlands) and Demetriou (honorary professor in the SoE and internationally esteemed psychologist from Cyprus) using CEM assessment data have also led to innovative and highly regarded research outputs in the areas of school effectiveness, literacy in the early years, and the development of Regression Discontinuity Approaches.

#### *Durham University Centre for Evidence in Education*

SoE staff working in the area of evidence for policy and practice in education have, since 2014, secured a total of GBP3,690,000 of external funding from the likes of the ESRC, EEF, DfE, Scottish Funding Council, Nuffield Foundation, and a host of others including Peter Sowerby and the National Literacy Trust. In the same time period they have published 12 research monographs and more than 325 distinct peer-reviewed papers, chapters, official reports and professional papers; as well as giving academic presentations around the UK and worldwide, including in Cyprus, Germany, Norway, Denmark, Japan, Spain, Finland, Netherlands, Peru, Italy and the USA. Furthermore, a submission on the work of DECE won second place in the 2018 BERA Impact and Engagement Award. As a result, they were invited to write a BERA Blog on DECE activity and its impact, as well as to contribute a paper to Research Intelligence journal. DECE were also funded as part of the ESRC Festival, to discuss the findings and implications of their work with the general public (videos providing an overview of the event and its 'question time' session can be found at: <https://youtu.be/BNNBSJlwcWs> and <https://youtu.be/5dkV8uNenbU>).

#### *Educational Psychology*

International collaborations within this cluster include joint publications and work on externally funded research with colleagues from mainland Europe, the United States, Asia and Australia. An example is N Beckmann's work on *Task Contingent Units of Personality and Adaptive Performance*, together with Prof Robert Wood (University of Technology, Sydney) and Prof

Yuichi Shoda (University of Washington). As part of this project, Prof Wood had the chance to spend three months as one of the fellows of the IAS at Durham University. Other examples include J Beckmann's invited Visiting Fellowship at University of Sydney's School of Psychology to work with Assoc. Prof D. Birney on *Re-conceptualisations and measurement of Cognitive Flexibility in Complex Problem Solving*. SoE psychological research outputs have also found wide national and international recognition, evidenced in numerous invitations to give keynotes, to run workshops, and to present at research seminars. Examples include: J Beckmann's invited keynote on Dynamic Assessment at the Conference of the International Association for Cognitive Education in Southern Africa (IACESA); N Beckmann's invited keynote at an European Association of Work and Organisational Psychology SIG meeting on Personality at Work; J Beckmann's workshop on cognitive flexibility for the Harvard Graduate School of Education (in David Perkin's Learning Laboratory, LILA); and Rattray's workshop on threshold concepts at Miami University, OH.

#### *Higher and Further Education*

Research collaborations in the area of higher and further education centre on a range of issues related to theory, policy, equity and inclusion, academic and professional practices and issues of globalisation and internationalisation. Within a global Higher and Further Education context, SoE staff are involved in a wide range of research activities and networks with national and international partners. These collaborative, global networks are vast - extending to countries such as the: US, Canada, Australia, New Zealand, Germany, Poland, Latvia, Estonia, Italy, Sweden, The Netherlands, Czech Republic and Ireland, where we have established productive and positive research links, and in many instances, given research presentations and seminars. Academic staff are involved in a range of research projects which have attracted external funding from agencies including the ESRC, AHRC, Erasmus, and the SRHE. For example, Tummons' collaborations with Professor Anna MacLeod, Dalhousie University, CA, have secured CAD380,000 (04-2013) and CAD270,000 (04-2017) in funding from the Canadian Social Sciences and Humanities Research Council. Research outputs include highly rated research articles in high impact journals: for example, Raaper's paper in the British Journal of Sociology of Education, which won its Early Career Paper Prize 2018. Other outputs include articles in Studies in Higher Education and Higher Education, and monographs and edited collections that bring together bodies of work, research reports and vocational papers. Furthermore, the cluster gets regular approaches from national and international students for doctoral supervision in this area, as well as numerous requests for hosting visiting scholars from overseas universities.

#### *International and Comparative Education*

Staff researching under the umbrella of the ICE cluster engage in international collaborations with partners and funders from Europe and beyond. Prominent examples include:

- 1) The Jean Monnet Network Project *EUROMEC: European Identity, Culture, Exchanges and Multilingualism*. The project is developing a network of international institutions to cooperate in research in the areas of European identity, culture, European citizenship, exchanges and multilingualism. In addition to Durham (Holmes and Reynolds), partners involved include: Sofia University, Bulgaria; Matej Bel University, Slovakia; Trinity College Dublin, Ireland; the Institute of European Studies of the Jagiellonian University, Poland; University of Luxembourg, Luxembourg; University of Leuven, Belgium; and Guangdong University of Foreign Studies (GDUFS), China. A core task of the network is to build knowledge and become a reference point for researchers in the themes of European identity, culture, European citizenship, exchanges and multilingualism. The Network involves doctoral students and young researchers from different scientific areas through open calls for participation and via inviting doctorate students from other scientific fields. The Network has hosted 3 summer schools, 13 events (seminars, workshops, conferences and final conference). In addition, 10 major deliverables have been scheduled (books, collection of papers, conference proceedings, thematic issues of national journals, working papers);
- 2) Montgomery's work with Tec de Monterrey in Mexico, researching the role of dialogic STEM education in addressing social and cultural disadvantage in Mexico and the UK; and
- 3) Welply's work with WISE-Qatar on Global Citizenship Education.

## Impact

SoE staff have also contributed to national and international debate on key topics such as the use and future of assessment, dyslexia and pedagogy. For example:

- 1) The iPIPS project has had significant and extensive impact on pedagogical understanding, policy and practice in the UK, Brazil, South Africa, Russia and Lesotho. Policy changes have included the introduction of the baseline assessment at the start of school in England, the creation of new educational instructional material and approaches in Rio, and the changes of direction in educational policy and practice in Kazan, Russia. Changes to pedagogical practice have been recorded in Brazil, South Africa and Lesotho, whilst (as described in section 2 above) the influence of iPIPS has been noted at the highest level by the OECD.
- 2) Elliott's work on learning and cognitive disabilities and effective approaches to intervention has impacted on reading difficulty related policy, practice and perceptions among practitioners and the global public. This has benefitted struggling readers in the UK and more widely. In particular: 1) several UK local authorities now accept that the practice of differentiating between so-called dyslexic and other poor readers has insufficient scientific support and often leads to inequalities of provision; 2) the research has impacted on professional assessment and intervention practices; and 3) extensive international coverage on television, radio, printed and social media, has sensitised clinicians, teachers, parents, and the wider public around the world to the complexities and problems surrounding a dyslexia diagnosis. As a result of this work Professor Elliott received the 2020 British Psychological Society Award for Outstanding Contribution to Educational and Child Psychology.
- 3) Research into *Threshold Concepts* (Land, Rattray, Reimann) has had a significant and extensive impact on pedagogical theory, understanding, practice and policy across multiple disciplines, organisations, and countries. In particular, the research has directly impacted on: 1) policy in higher education, further education and secondary educational contexts both nationally and locally, with subsequent significant changes to admissions policies, and curriculum design and assessment; 2) pedagogical understanding and practice, with subsequent impact on student learning and learning experience - most schools now adopt programmes citing our evidence as support; 3) professional bodies and communities of practice, with subsequent changes to professional standards, guidance, policies and practices; and 4) work-based learning products, with subsequent impact on games design at private international organisations.
- 4) Our work on the Education Endowment Foundation's Teaching and Learning Toolkit includes claims by Government that the Toolkit was a key part of its policy on the education of disadvantaged children (updated policy briefing November 2014) and referenced in the Education White Paper of March 2016. The Toolkit is also used by at least 64 per cent of schools in England according to the National Audit Office (30/06/15), and receives some 14,000 unique page views per month (Google Analytics). Furthermore, international use is growing with customised online versions for Scotland, Australia and Latin America. Our expertise in this area has also led to Gorard, Siddiqui and See being selected to join the What Works Trial Advice Panel, part of the Prime Minister's Implementation Unit.

Because a key objective of the SoE is to maximise the reach of its research and analyses to a range of audiences, during the current REF period, we have developed a comprehensive stakeholder engagement strategy. This includes:

- 1) Academic staff contributing regularly to academic and professional blogs and maintaining an active social media presence: This ensures we promote research findings and work to a wide and varied international audience, including through outlets such as New Scientist, Public Finance, Public Sector Focus, Schools Week, and the Conversation;
- 2) Influencing the public discourse and debate, through academics engaging with the mainstream media: for instance, SoE staff have benefitted from extensive media coverage of their research and its implications, averaging a news story/appearance once a week since 2014, with broadcast interviews to BBC TV Breakfast, Sky TV News, ITV News, as



well as BBC radio (Radio 4, FiveLive, Radio 1 newsbeat and Radio 2). In addition, press interviews and pieces written for newspapers include major outlets such as the New Statesman, Guardian, Sunday Times, Independent, Observer, Daily Mirror and the Sun, as well as educational specific papers/magazines such as the Times Educational Supplement and Times Higher Education. An example of our success includes maximising exposure to our work on segregation, where we ensured our analyses (by Gorard and colleagues) made national headlines, resulting in a number of politicians sharing and discussing the research results online (including Lucy Powell MP, Peter Kyle MP). It was also raised by Lord Storey in a consultation on *Schools that Work for Everyone* (see: <https://tinyurl.com/ya5qv8r8>), and Lyn Brown MP in a discussion on social mobility (see: <https://tinyurl.com/y72osaa2>).

- 3) Engaging directly with practitioners and policy-makers: for example, SoE academics have given evidence and advice to a range of policy-makers, both in the UK and abroad (e.g. the Ministry of Education in Cyprus (Chinas), Cabinet Office, DfE, House of Commons Education Committee, Scottish Parliament Education and Skills Committee) as well as oral and written evidence to the Social Mobility Commission for their 2018 *State of the Nation Report*. An example of positive impact from such engagement is the SoE's work on reducing the disadvantage gap (which includes an analysis of the 'trajectories' of individual disadvantage indicators), which featured in the Scottish parliament's Education and Skills committee submission pack (<https://tinyurl.com/yab2z77s> p.348).

### **Citizenship**

Our contributions also include general citizenship. The school hosts and edits the BERA journal Review of Education (editorial board comprising Gorard, Kokotsaki, See, Siddiqui, Torgerson, Tummons). During the current REF period, Higgins has been editor of the Curriculum Journal; Tymms, editor of the Online Educational Research Journal; and Simpson editor of Research in Mathematics Education. Raaper is associate editor for Critical Studies in Education, Tummons was associate editor for Higher Education Research and Development, Smith associate editor of the Journal of Philosophy of Education, and Montgomery deputy editor for the Journal of Education for Teaching. Elliott was also recently nominated Associate Editor for the American Psychological Association journal, Psychological Review. Members of SoE staff also currently serve on the editorial boards of other academic journals, including: British Educational Research Journal; British Journal of Sociology of Education; Educational Research and Evaluation; Journal of Dynamic Decision Making; European Educational Research Journal; New Directions for Child and Adolescent Development; Psychoeducational Assessment, Intervention and Rehabilitation; International Journal of Educational Research; Frontiers in Psychology; Comparative Education; Educational and Child Psychology; and the British Journal of Special Education.

In terms of wider scholarly activity as academic citizens, SoE hold a number of roles, including board member of the International Congress for School Effectiveness and Improvement (Brown); Chair of the Royal Society of Chemistry Chemical Education Research Group (Kind); Honorary President of the Philosophy of Education Society of Great Britain (Smith); Chair of the International Association of Language and Intercultural Communication (Holmes); expert advisors to the DfE and NICE (e.g. Elliott; Gorard; Merrell). SoE staff regularly act as external examiners, and are frequently asked to evaluate grant applications for major national as well as international funding agencies. The former includes the Economic and Social Research Council (See and Siddiqui are Introducers for ESRC Grant Assessment Panels B and D, and Gorard an Introducer for Panel B during this REF period), The Leverhulme Trust; The Nuffield Foundation; Royal Society; and British Academy). Example of the latter include: EU Horizon 2020; the Australian Research Council; and the US National Science Foundation, as well as similar bodies in Belgium, Brazil, Croatia, Kazakhstan, Luxembourg, the Netherlands, Portugal and Romania.

Furthermore, in recognition of their substantial contributions to and leadership of the social sciences, five of our Professoriate have been awarded Fellowship of the Academy of Social Sciences (Elliot, Gorard, Higgins, Torgerson, Tymms). Other fellowships include: Fellow, Royal

Society of Arts (Gorard, Kind, Kokotsaki, Montgomery, See, Ward); Fellow of the Royal Societies of Biology and Chemistry (Kind); and Fellow of the British Psychological Society (Elliott).