

<p>Institution: University of Nottingham</p>
<p>Unit of Assessment: 23</p>
<p>1. Unit context and structure, research and impact strategy</p> <p>The Unit of Assessment maps onto the School of Education. 36 staff (33.1 FTE) are returned from six centres. This centre structure was revised in 2014 and reflects areas of longstanding commitment in the School and our collective view on our distinctive contribution to the field.</p> <p>The Centre for Research in Mathematics Education (CRME) works mainly through large-scale commissioned research and high-level policy advisory work. It prioritises post-compulsory learning of mathematics (and quantitative skills) to address social challenges of inclusion and economic imperatives around productivity. Policy debates about the importance of arts in schooling have driven the Centre for Research in Arts, Creativity and Literacy (CRACL), which has focused on partnerships with national organisations such as the Royal Shakespeare Company and the Tate. The Centre for Research in Educational Leadership and Management (CRELM) addresses new forms of educational leadership and governance in the light of the major transformations of the schooling governance landscape. The Learning Sciences Research Institute (LSRI) is dedicated to the interdisciplinary study of learning in real-world settings and to understanding how learning may be facilitated both with and without technology. The Centre for Research on Human Flourishing (CRHF) has revitalised the School's long counselling tradition through research on effective ways to support inclusive human flourishing. The Centre for International Education Research (CIER) has a distinctive focus on post-school international education research on education's role in delivering the Sustainable Development Goals (SDGs). The research centres run seminar programmes for staff and students, manage PGR admissions and contribute to research planning.</p> <p>Identification of new research challenges and opportunities shapes the regular refocusing of all centres. Additionally, a series of cross-centre priorities has emerged around such issues as randomised controlled trial (RCT) capacity, vocational mathematics, and refugee and migrant education.</p> <p>The Research and Knowledge Exchange Committee (RKEC) provides strategic oversight. It meets six times a year, chaired by the Director of RKE (DoRKE). It has a three-part membership: (1) staff with responsibility for oversight of discrete areas: ethics and integrity, scholarship, knowledge exchange, research planning, writing support, bidding, REF and PGR integration within the <i>RKE Strategy</i>; (2) centre convenors; and (3) senior School and Faculty research administrators.</p> <p><i>Achievements:</i> Several key indicators are up on the last REF. The number of staff returned is up 44% (36); research income 45% (£16.2 million); outputs 16% (582). Awards from high status funders grew by 33% (36- UKRI 22; Nuffield, British Academy, Royal Society and NIHR 14). School staff have collaborated with partners on grants worth 78% more than in the last REF (£57m). 37 staff (20 women; three BAME, of whom two are women) were principal investigators in the current period, and another 38 were Co-Is (19 women). 10 (eight women, of whom one BAME) became PIs for the first time. 202 PGRs completed successfully, including 93 EdDs: a 13% increase since the previous REF.</p> <p><i>Strategy:</i> These achievements were made possible by the School's strong focus on research strategy and its delivery. The School research strategy is formally reviewed triennially by the RKEC. In 2016 we shifted to a research <i>and knowledge exchange</i> focus. The 2019 revision took place alongside the development of a new <i>Faculty RKE Strategy</i>. We are committed to:</p> <ul style="list-style-type: none"> • generating exciting research that makes important contributions to knowledge production and to social transformation; • facilitating the dissemination of original, significant, rigorously conducted research in a range of formats and considered by academic peers to be world leading;

- maintaining a well-resourced, supportive and stimulating environment that facilitates high quality work and develops future researchers and research capacity;
- working together and with others in ways that are ethical, inclusive and sustainable;
- delivering impact and engagement approaches that connect our work with diverse communities within and beyond the university.

The School has 119.42 FTEs of academic staff, more than four times the REF-eligible staffing. This includes large numbers of staff in English language education and teacher education. The 2019 *RKE Strategy* sought to meet more explicitly the needs of this wider community for research support. With respect specifically to REF, our aim for this cycle was to at least maintain our GPA (third last time) whilst significantly improving our returned numbers.

Research planning: Effective research planning has underpinned key successes. Our approach to individual research planning, outlined in the REF2014 environment statement, was adopted across the Faculty. In the summer of 2018, two senior professors facilitated a residential workshop with a group of mid-career colleagues, highlighted as a priority group in REF2014. This piloted a novel approach in which the existing individual reflection with a mentor is complemented by peer group discussions of research agendas, stressing ambitious medium-term vision. From autumn 2019, this group-based research planning process was opened to all academic staff. After a pause, the programme will be relaunched after lockdown. All staff are encouraged and supported to find a mentor at induction, and mentoring relationships are reviewed annually.

Funder management: As highlighted in our 2014 submission, the School has responded proactively to very major changes in education research funding over the past decade. We deliberately targeted emerging sector-specific funders such as the Education Endowment Foundation and the International Baccalaureate. We have invested School funds in relationship management with these key funders, facilitating staff travel to visit them regularly. This has helped secure repeat funding (eight IB; 14 EEF projects). The School continues to work with Faculty (see Section 3) to target high-prestige funders, such as UKRI, with a particular emphasis on GCRF. Since 2018, we successfully gained funding for six GCRF projects (over £7m total value), working with three other schools (Medicine, Sociology/Social Policy, Biosciences) and other UK and international partners. As noted above, research income has significantly increased.

Writing: We have prioritised supporting the improvement of academic writing as part of professional development of all staff. Writing mentorship is available for all, alongside a promise that all draft journal articles will be read by a senior professor prior to submission and resubmission. There are regular academic workshops and retreats within the School and financial support is available to attend retreats offered externally. The School has benefitted considerably from **Thomson's** standing as a leading academic writing researcher (see Section 4).

Mindful of the range of outputs that are important to a school of education, we have developed a programme of support for diverse types of writing, including authoring textbooks, writing for professional readers, for the general public, for policymakers and for academia. Social media training takes place biennially.

From 2017 to 2019, the Education Media Centre (EMC) supported staff in writing for various forms of media. Through individual support and group training sessions, 37 members of staff (three CRS; 27 women, of whom one is BAME) were facilitated to identify and produce pieces for a variety of conventional and social media outlets. A jointly authored book by **McIntyre** and the EMC founder also resulted. An EMC-supported 2017 article by **Medwell** in *The Telegraph* was calculated to have had a reach of 35.8m. EMC also provided media training to African partners in a GCRF project during 2019, facilitating a project website / social media accounts to be based in Uganda rather than England.

Partnerships: The School promotes collaboration with academics in other institutions, particularly on large grants, funding initial scoping visits where necessary. This resulted in participation in successful large grants (>£2.5m each) from NIHR, GCRF and the South African Government. The identification and promotion of strategic international partnerships is prioritised, most particularly through Universitas 21 (see Section 3). Collaborations happened with 245 external research partners in 53 countries, a more than doubling of the partnership network since REF2014. Through the School's continued commitment to UNESCO (see Section 3), new collaborations took place with 22 other UNESCO-affiliated structures on five continents. Since 2001, the International Successful School Principals Project has been convened by **Day**. This network has now expanded to 34 partners in 25 countries, generating more than 200 outputs.

We also continue to prioritise internal collaboration in line with the University's strategy for transdisciplinary, challenge-led, globally significant research (see Institutional Statement). Staff who have existing relationships with other schools are encouraged to use these links to bring newer colleagues into such partnerships, and the state of intra-Nottingham collaboration is a regular RKEC agenda item. This approach grew the breadth and depth of our internal collaborations, reflected in joint research activities with 21 other units, across all faculties, including collaboration in large grants from the EU, DFID, NIHR and UKRI. We have participated actively in major university research initiatives, such as new research beacons (see Section 3). Moreover, the School played a catalytic role in developing a university-wide network on higher education pedagogical research and practice (see Section 4).

Digital research: We seek to be pioneering in our response to the dramatic changes in digital research tools and resources, drawing particularly on LSRI expertise. **Davis, Reyes** and **Vogel** serve as "digital research champions" to support wider adoption. We regularly trial new research and analysis tools (such as automatic transcription) as well as piloting new research integrity processes (see below). We make extensive use of the University's Digital Solutions Hub and support from the Faculty Digital Research Manager to find innovative ways to make use of digital technologies to improve how our research is undertaken and communicated, a matter of even greater urgency during the pandemic. The School played a key role in a successful ESRC SafePod bid (see Section 3).

Research ethics and integrity: We have sought to be at the leading edge of ethical processes in all our research, and to respond effectively to the growing emphasis on research integrity. Until summer 2018, ethics was an annual standing item on the RKEC agenda. Since then, Research Ethics and Integrity has been promoted to being a RKEC portfolio. The role holder is responsible both for oversight of the existing research ethics system and for planning research integrity training and information dissemination. She also sits on the University Research Ethics Committee. In 2019 the University appointed a head of research integrity, and the School process of reviewing existing ethical procedures has been informed by participation in strengthened University structures and discussions with the UK Research Integrity Office. The School was also one of four that collaborated to develop a new international education research ethics process for the British Association for International and Comparative Education (BAICE).

Research integrity training is mandatory for all researchers and PGRs. GDPR compliance training has taken place for staff and students and GDPR considerations have been built into ethics processes. Approaches to data management have been tightened, building on a university-wide adoption of Office 365, and new protocols for use of transcription services. Where possible, the School has volunteered to pilot these new initiatives. Authorship protocols were reviewed in 2018 to reflect the latest guidance from UKRIO and HEFCE.

2020 revisions to ethics processes focused on building a culture of ethical research, rather than of compliance, and responding ethically to the challenges of researching under lockdown. With the rapid increase in digital research during the pandemic, our three "digital research champions" were co-opted onto the ethics committee.

Inclusive research: As a large School, with most staff classified as teaching and learning focused, we insist that we are all engaged in research-informed activities, regardless of contract type. A key role on the reconfigured RKEC is that of the champion for the wider scholarly work of School staff. Whilst staff have opportunities to change track between academic contracts, a fundamental principle of inclusion in the School is ensuring support for all staff to produce high quality research that informs both theory and practice communities. Three staff on the teaching and learning route are professors, reflecting the commitment of both the School and the University towards full career paths for all academic staff.

Impact: The School is committed to social science that makes a difference to policy, practice and people. Beyond aiming to maintain the 100% 4* rating on impact from REF2104, through continued support to high impact activities, we have sought to make impact work integral to our research. Here, we have benefitted from the University's wider commitment to strengthening impact and, particularly, the Faculty's ESRC Impact Accelerator Account (see Section 3). This facilitated work with a range of international, national and local actors (see Section 4). The selected impact case studies reflect the School's strategic objectives outlined above, which are being advanced through a broad coalition of actors including policymakers, trade unions, local government, and educational providers.

Knowledge exchange: As a school of education, we have wide-ranging relationships with professional communities and have long engaged in knowledge exchange (KE) work with them (see Section 4). In 2016, a KE role was created within the RKEC with the mandate of leading a mapping and reprioritisation of KE activities; developing a more coherent continuous professional development and learning (CPDL) programme; contributing to the institutional *Knowledge Exchange Strategy* revision (released 2019); and preparing for KEF. The School carried out a KE audit in late 2019 but developing a new comprehensive *School Knowledge Exchange Strategy* was halted during lockdown because of the urgent need to adapt our work with schools and other providers to transformed circumstances.

Open research and responsible metrics: The University has signed up to the *San Francisco Declaration on Research Assessment* and the *Leiden Manifesto for Research Metrics*. It has established a working group to develop positions both for *Plan S* consultations and for potential implications. Its strong support of the *UK Scholarly Communications Licence and Model Policy* process includes membership of its advocacy task and finish group. Aligned to the *Concordat for Open Research Data* and the *Sorbonne Declaration*, the University has implemented a new *Research Data Management Policy* (see Institutional Statement).

The School adopted new policies and procedures to align with these initiatives and provided training drawing upon national advice and our own experience gained from DfE, EEF and UKRI projects. From early 2020, all new staff and PGRs have been required to participate in the University's online Research Data Management (RDM) course, and awareness of RDM policy has been made integral to staff inductions. RDM plans are now mandatory for all ethics approval applications.

The School has encouraged gold open access publication and libraries staff have provided training. 38 gold outputs have resulted, some School funded. Green OA compliance has been strengthened by a new university-wide research information system. Monthly reports are compiled on the open access compliance of newly published items, allowing the School REF coordinator to address issues with academics in a timely fashion. All research staff have ORCIDs and teaching and learning staff have been encouraged to get ORCIDs and to comply with the University's open access processes. All doctoral theses are now available online unless embargoed. There were more than 28 000 downloads of theses submitted during the REF period.

Future plans: The pandemic led to delays in the review of some internal processes (e.g., KE) and a temporary halt to investments in new appointments and staff development. However, the School's financial position appears secure and new investments in staff are planned for 2021.

The staff profile by late 2021 will be significantly younger than in early 2020, so strengthening the existing career development and mentorship processes will be a major priority. The School was already investing strongly in digital research and will accelerate its plans to disseminate promising new practices internally. The School has been successful in orienting staff towards new funding opportunities and will seek to continue this into the next REF cycle, including through a future-sensing exercise in early 2021 to identify emergent funding opportunities.

2. People

The 2014 Environment Statement highlighted that the School's age profile was heavily skewed towards older staff, typical for the UoA nationally. We made addressing this a major strategic priority. Since 2014, six professors have retired, whilst three (all male) are on fractional contracts as they move towards retirement. New appointments have been made, including two younger full professors, with more posts agreed for 2021. We continue to invest in all staff and PGRs. We have sought to improve our responses to EDI imperatives.

Staffing strategy: Since REF2014, we have sought to align our research staffing plans to the changing environments of research funding and education policy to promote unit sustainability. The increased importance of RCTs in education and of EEF funding led us to invest in new permanent appointments with relevant skills (both professorial and ECR), capacity development of existing staff and additional recruitment of specialist contract researchers. Equally, the SDGs, and emergence of GCRF, stimulated further investment in international education research capacity.

New appointments were made across staff levels: two professors (one woman), six associate professors (four women) and five assistant professors (three women). Seven were recruited internationally from four continents. Of the 36 staff returned, eight were recruited as ECRs (five women). A stronger focus on attracting competitively funded ECR fellows in the most recent RKE Strategy resulted in appointments of new fellows on three-year awards in 2019: **Hordosy** (Nottingham Research Fellowship) and **Halls** (British Academy). One female staff member had a reclassification of contract status to REF-eligible.

Only one BAME academic was appointed amongst those listed above. This prompted an internal review in 2020 and a School commitment to making EDI considerations even more prominent in staff recruitment processes, especially as further senior staff retire in 2020/1. This will be informed by the University's *Diversity in Recruitment* policy (2018). All School staff involved in recruitment (c.30 staff) will receive relevant training during Autumn 2020.

The School has worked to sharpen the EDI lens on promotions in keeping with an overall University commitment. Metrics such as impact factors have been made inadmissible in promotions processes and consideration is now explicitly given to those who have not applied, with discussion addressing whether there are staff with protected characteristics who may have felt unable to apply. These discussions are then followed up by the Head of School. Four REF-eligible staff were promoted (two women; of whom one BAME). 50% of research-active associate and full professors are women. In 2020, four associate professors (all women; one BAME) have been identified as having strong medium-term potential for promotion and are receiving career mentoring.

Research development time: Following concerns about the effectiveness of research development time, in 2014 it was targeted more clearly towards specific outcomes in support of medium-term personal research planning (see Section 1). As well as semester-long blocks, various shorter amounts of time were made available, for reading into a new area, for bid writing, for intensive impact work, or for the development of books and high-quality research articles. These shorter blocks were open to all permanent academic staff and were extended to CRS from 2019. Research development time was suspended in mid-2020, but the School will reinstate the programme from mid-2021.

Early career and contract research strategy: We have a dual focus on capacitating ECR/CRS to meet their current role requirements and to support them in their longer-term career development. Their mentors focus on opportunities for joint bidding with colleagues within and beyond the School, for getting doctoral supervision experience, and for identifying career development opportunities, e.g., with journals and learned societies.

For CRS (c.10 at any time), mentors are not their PI(s), and non-project-related career development goals are at the core of these relationships. Individual training needs are reviewed regularly, and external training funded where desirable. In July 2019, the School hosted and funded a training course by the Office for National Statistics for researchers working with official datasets. This arose from analysis of CRS's training needs and was coordinated by them. Because the training took place in Nottingham, it could be accessed by PGRs and CRS from across a range of schools.

CRS are encouraged to identify conferences that are important for their career development beyond those funded by projects. 12 received £17 000 between them to attend such conferences (nine women). They were named authors on 75 outputs in the REF period (63 women), a 63% improvement on the last REF cycle. Until lockdown, quarterly lunches were held between the DoRKE and CRS to allow for discussion on areas of CRS concern; these are now online.

Across these activities, the School benefits from University compliance with national agreements regarding early career and contract researchers (see Institutional Statement). The University has gained the European Commission's HR excellence in research badge, reflecting its adherence to *The QAA Code of Practice for Research Degree Programmes*, *The Concordat to Support the Career Development of Researchers* and *The European Charter for Researchers and Code of Conduct for their Recruitment*. All ECRs benefit from the University's wider programme of support, including research staff conferences and writing retreats, as well as School-led activities noted above. They are given bespoke support by the Careers and Employability Service, and the University is committed to making all such staff permanently employed after four years of continuous service. Two CRS became permanent staff in this REF cycle.

People development: The School is also fully aligned with the University's *People* strategy. We are opposed to zero-hour contracts and have sought to move as many staff as possible onto permanent contracts. As noted above, supporting CRS towards permanent employment is an important part of our people strategy.

The School encourages part-time and flexible working where requested. The REF-eligible staff demographic has meant there has been no parental leave claimed during the REF cycle, but staff have been supported to take extended leave of absences for illnesses and caring responsibilities.

As detailed in the Institutional Statement, future and present research leaders are supported through a range of programmes. Two staff (both BAME women) participated in the University's Research Leaders Programme. As detailed in Section 3, nine staff (three women, of whom two BAME) received School/Faculty support to work on potential impact case studies. Five participated in the ESRC-funded impact leaders' programme (three women, of whom two BAME). This focused on providing training in thinking about impact; funding meetings with partners; and resourcing impact evidence gathering using impact officers and interns.

58 School staff (41 women; seven of whom BAME) accessed University Leadership and Management Academy programmes online and 30 (24 women) took face-to-face modules; with five REF-eligible staff acting as mentors or coaches (all women). We established a programme of subsidised project management skills development, targeted primarily at administrators and CRS. We encouraged female staff across grades and contract types to participate in the University's Florence Boot programme, which offers six-month professional development courses. 19 women from the School participated in 70 Florence Boot programme courses.

Equality, diversity and inclusion: The Institutional Statement outlines the University's commitment to promoting EDI, including the creation of a dedicated EDI Pro Vice-Chancellor role in 2018 and developing an *EDI Strategic Delivery Plan*. School staff have played a strong role in the University's Institutional Staff Equality and Diversity Networks and the Race Equality Charter Self-Assessment Team, including chairing the LGBTQ Forum. **Walton** is the Faculty EDI Director. In 2017 we established an EDI forum led jointly by administrative and academic colleagues. 63 School staff have participated in EDI-focused short courses since then.

The School began an Athena Swan accreditation application in 2019. A period of EDI-related data gathering was followed by critical reflection on existing policies and practices. An application was planned for Autumn 2020 but is on hold due to concerns regarding the burdens of the application process for the staff involved during lockdown. The draft action plan provides a series of important new initiatives to improve our research environment and culture from an EDI perspective, and elements have begun to be implemented.

This process reinforced findings from our own research that it was essential to go beyond a gender analysis of our culture and practices, particularly given the highly feminised nature of the education workforce, and a history of female heads of school for 14 of the last 18 years. This led to a general acceptance of the need to think more critically about EDI issues, especially regarding intersectionality and decoloniality. Since 2019, we have been engaged in School conversations about transforming our culture and practices across and beyond protected characteristics, and about decolonising our curricula, drawing on our research in both areas.

The School is fully compliant with the University's *REF Code of Practice*. We participated in the University's equality impact assessment described therein. The EDI status of our whole REF return has been a standing item of our REF management group, and the REF coordinator was a member of the Athena Swan team. As detailed in the University institutional environment statement, School-level selection decisions were subject to regular challenge from the University. Additionally, the Faculty EDI Director reviewed the draft final REF submission.

In the previous REF, two female BAME staff members were returned. One progressed from research fellow to professor at Nottingham and moved on to a significant management role at another Russell Group university. Two BAME staff members (one woman) are included in this return. In REF2014, 48% of staff returned were women. By allocated staff member, 57% of outputs returned in REF2021 are from female staff; 5% come from BAME staff. We initially expected impact case studies to have three female (one of whom BAME) co-authors. However, a retirement and a move to another university resulted in a final return that is entirely white male. As detailed elsewhere, we invested in a range of impact accelerator awards that should form the pool for case studies in the next cycle, with EDI a factor in selection.

Postgraduate research strategy: Doctoral education is a priority of the School, Faculty and University. The University participated actively in the drafting of the 2019 Concordat and is fully committed to its implementation (see Institutional Statement). The School aims to fully include PGRs in our work and life: they are active members of research centres; doctoral completion rates have significantly improved; transferable and employability skills development, and PGRs' capacity to publish have been enhanced; internship opportunities have been increased. Particular efforts were made during the pandemic to keep PGRs actively involved in centre activities as these went online. Staff across several research centres have interests in HE pedagogies and this research work informs our support to PGRs. As detailed in Section 4, this is also used to support wider pedagogical change in the University.

At the time of the last environment statement, the School supported over 300 PGRs. There are currently 231 students on programme. The reduction in numbers in part reflects the completion of studies by PGRs from legacy programmes such as our Hong Kong EdD. Additionally, given the staff age profile noted elsewhere, and anticipated retirements, there needed to be a relative focus on timely completion rather than recruitment for a period. Since 2014, 202 PGRs have completed successfully, including 93 EdDs.

With the appointment of new staff without supervision experience, our focus in 2020 has been on targeting new recruitment of PGRs towards building new supervision capacity, as well as centre, School and University research priorities. At centre and School level, there is an active programme of training and mentoring ECRs as new supervisors and examiners.

Nottingham's ESRC Doctoral Training Centre was replaced by the Midlands ESRC Doctoral Training Partnership in 2016. The consortium provides interdisciplinary training across 13 individual pathways and hosts one of the largest groupings of social science doctoral students. **Ainsworth** led the design of the Education pathway and **Stevenson** is the University's DTP training lead. There have been 15 recipients of research council studentships (from three research councils) as well as three each of University and School studentships. The School has led advanced training for mixed methods research and RCTs.

We revamped our doctoral education in 2017 following extended consultation with students and considering the new opportunities provided by the DTP. Our new approach was closely informed by the *QAA Quality Code for Research Degrees* and the *Vitae Researcher Development Framework*. It was designed as a blended model combining online learning with face-to-face seminars to offer flexibility for those studying part-time, going fully online under lockdown. It is continuous over the course of the degree, adapted to the unique needs of early, middle and late-stage PGR work. The programme strongly reflects our traditions of researching academic writing and higher education learning. Student response to this broader and more continuous structure has been highly positive.

We undertook major revisions of our EdD programme in time for an Autumn 2019 relaunch. As reported in the REF2014 environment statement, we signed an agreement with the Ningbo Education Bureau for it to fund 60 EdD students on a split-site programme and students continue to graduate from this. The programme was extended to other students and there are currently 78 on programme, largely co-supervised by staff at the Ningbo and Nottingham campuses.

Students' publishing is supported both through a School writing programme, developed by senior staff and informed by their research on academic writing, and by the Nottingham Researcher Academy's suite of academic writing courses. Publication outcomes and plans are integral to the annual review process. There have been at least 74 PGR outputs (66 women) with supervisors or sole-authored, an increase from 50 in the previous REF cycle. Two jointly won the 2019 best article award from the *Education Review* with **Stevenson**.

Internships have continued to contribute to increasing PGR employability. We offered 34 PGR internships, internally or partner funded (27 women; 17 BAME), up from 17 in the previous REF cycle. Building on the larger UNESCO partnership, two students (both women and BAME) co-wrote a background paper for the 2019 *Global Education Monitoring Report* with staff. One went on to lead an online discussion forum on vocational education and training and inclusion, and solo write a background report for GEMR2020; the ESRC funded the other to have an internship with UNESCO in 2020.

We understand conference attendance as an important part of the doctoral process. Students work with supervisors to identify key conferences to attend. 94 conference support awards were made to PGRs (72 women; 34 BAME, of whom 25 women) worth over £22 000. The importance of conference attendance to doctoral learning was the subject of a U21 ECR Forum for International Networking in Education (FINE) research project (see Section 3). In the light of COVID-19, 2020 saw both School and University provide new resources to support students presenting virtually.

Wider networks of doctoral collaboration are also valued by the School, which was part of a Marie Curie doctoral collaboration in the REF period. We are the sole UK partner in the Network of Academic Programs in the Learning Sciences, a network of postgraduate programmes under

the International Society of the Learning Sciences. This comprises more than 30 universities in 11 countries and is coordinated from Nottingham by **Vogel** (female ECR).

As part of the Athena Swan accreditation process, we had intensive discussions with the PGR community on their experiences of the School and University from an EDI perspective. Whilst their overall views were positive, the consultation pointed to areas for further work, reflected in the draft Athena Swan action plan. On their own initiative, the PGR body organised their 2019 conference to be on the theme of EDI, and the School funded the participation of two major national EDI leaders as keynotes.

Honorary appointments: The appointment of two senior UNESCO staff as honorary professors, noted above, is part of a wider strategy to identify key policy figures who can help the School's impact work. Other key honorary appointments include the former chair of the House of Commons Education Select Committee and the former General Secretary of the Association of School and College Leaders. Over the REF period, we had 65 honorary staff (23 women; nine BAME). Each serves for a three-year term and reappointments are subject to School and University approval based on the extent of the relationship over the previous cycle and the plans for the next. The School sets aside funds to support such activities, dependent on strategic importance.

3. Income, infrastructure and facilities

As noted in Section 1, research income totalled over £16 million, including 22 UKRI grants under four councils and the GCRF, a 45% increase in grant income. The School also received 12 EU awards and five from DfE, whilst staff were investigators on grants totalling over £57m from all sources, which also included DFID, NIHR, Nuffield and the South African Department of Higher Education and Training. The School has invested strongly in researcher support, both in terms of direct funding and infrastructure, often in partnership with Faculty and University initiatives. There has been particular focus on ECR, CRS and PGR colleagues. Investment has been a mixture of foundational (e.g., staffing and PGR infrastructure), responsive (e.g., conferences and seedcorn) and strategic (e.g., support to the UNESCO and U21 relationships).

Strategic staffing investments: As detailed in Section 1, the School has targeted investment in new REF-eligible staffing towards strategic priorities. This drove appointments with methodological expertise and funding track records in RCTs and systematic reviews; in international post-school education and training; and in original approaches to school leadership and governance. Recently, we also targeted prestigious early career fellowships, including benefitting from the University's £15.4m investment to date on internally funded fellowships. We are committed to make long-term appointments from these awards.

As outlined in Section 2, the importance of investing in EDI is recognised at University, Faculty and School level. As a result of the ongoing Athena Swan process, the need to increase awareness of intersectional differences and inequalities will be addressed in part through investment in staff development.

Expenditure on researcher development: Approximately £350 000 of School, Faculty and University funds were used to support a range of career development activities (excluding the costs of research development time). Approximately one-third was additional Faculty support for output and impact work, across 15 successful internal bids (seven women, of whom two BAME). A similar amount of competitive internal University funds supported seedcorn projects (10 staff: six women, of whom one BAME). The School spent £135 000 to support 64 staff to attend conferences (37 women, of whom four BAME). This included cover for the costs of meeting caring responsibilities whilst attending events, as per University policy.

We have run annual staff conferences and regular workshops for academic staff on academic writing and research planning and bidding. We funded residentials, attended by 16 staff (12 women, of whom two BAME) and delivered by senior professors. In conjunction with Faculty research business development officers, we identified staff to participate in bid writing

workshops for specific funders, such as UKRI and Leverhulme. 10 staff (eight women, of whom one BAME) became PIs for the first time.

Staff were supported to make visits to institutions on six continents to explore or strengthen partnerships. The School is active in the Universitas 21 network, participating in the annual U21 Dean's Forum for Education and in FINE. U21 partnerships were pursued most actively with Connecticut, Johannesburg and Lund, including both joint research, and staff and student exchanges. Funding was secured for exploratory visits to Zurich and British Columbia. Through FINE, Nottingham PGRs jointly published with colleagues from Edinburgh, Connecticut and Melbourne on PGR experiences and co-convened events annually at the European Conference for Education Research.

Where appropriate, the School underwrites research projects. This is particularly the case for prestigious awards such as British Academy small grants that do not cover staff time; for complex, large grants; and where the research is seen as strategically important for early career development.

Research infrastructure: As noted above, the School benefitted from the University's £9.3m investment in its Digital Research Strategy (see Institutional Statement) and its successful SafePod bid. As part of the former, in 2018 the School bought a suite of digital tools which are loaned to both staff and PGR students as needed. The SafePod widens access for staff and PhD researchers to securely access key education datasets such as the National Pupil Database, Higher Education Statistics Agency dataset, Individual Learner Records and the Next Steps survey. It is much more cost-effective, avoiding long distance travel to dedicated safe settings provided by the Office for National Statistics and ESRC. We benefitted also from the investment of over £9m pa in six beacons of excellence, most notably the Rights Lab, where the School played a leading role in work on migration through **Thondhlana**, and Future Food, where we are collaborating on GCRF-funded activities on agricultural education and research.

The School continued to invest in a strong research support and administration team to complement and enhance the support provided by the Centre for Advanced Studies (CAS) at Faculty level, and the university-wide research support systems and teams. The School team (seven staff) provides support for the full research lifecycle, including bid development; project management through to closure; portfolio monitoring and reporting; as well as REF submission co-ordination. CAS provides expertise in identifying funding opportunities; developing grant applications; mentoring academics in research project planning and knowledge exchange at all career stages; fostering collaborations between disciplines and with non-academic partners; supporting consortium development; and providing an academic peer-review mentoring scheme for funding application. The CAS team includes a dedicated research development manager for Education, who works closely with the DoRKE and individual academics to support bid identification and writing. As noted elsewhere, the Faculty invested in an impact officer, as well as a digital research manager. The CAS team also supported the development of interdisciplinary research networks and the delivery of platform grants to enable new research collaborations. We collaborated with CAS on mentorship and training around bidding. As noted above, the Faculty led successful bids for ESRC IAA and DTP funding, crucial to the overall School research environment.

PGR infrastructure: PGRs have access to School, DTP and Researcher Academy infrastructure and facilities. All full-time students have dedicated individual study spaces in shared student offices within the School. They are provided with a dedicated computer, and access to a computer training room, the University software library and training, and a dedicated PGR common room. Part-time students can access hot desks and those in a position to use facilities for a more concentrated period are provided with individual study spaces. PGR students also have access to the training courses and common rooms of the Researcher Academy. They shape their own community, having an online PGR community space where they share their expertise (with increased use of WhatsApp groups under lockdown), organising both academic and social events, and developing specific resources to enhance their study. They elect student

representatives from both the PhD and EdD communities, are highly active in the School Learning Community Forum (the formal body for student voice), and organise and run an annual dedicated PGR conference, including a poster session. They also self-organise, with School support, regular social and academic events like writing days. School seminars and other events are recorded and made available online. As a response to lockdown, most of these activities have moved online and students have been able to access additional support with equipment.

The School has a Director for PGR and dedicated administrative support. Progression at doctoral level is assessed through annual review by an independent academic. The aim is to ensure any problems are addressed early before they have a chance to escalate. This process is overseen by the PGR Director and PGR support is further enhanced by a Postgraduate Student Advisor and a School Welfare Officer to whom students can turn for additional support. All these staff also assist students in accessing University support services.

The School and the Researcher Academy operate competitive funds to support PGRs with conference attendance and research expenses (see above for details of School funding allocated and COVID-19 response). PGRs also have the same access as staff to School and University digital tools.

Supporting impact: The Faculty secured £2.4m of ESRC impact accelerator funds and the School was active both in the collective management of these funds and in participating in a range of activities. Five staff (three women, of whom one BAME) participated in the ARMA award-winning, ESRC IAA-funded impact leaders' programme, working with external partners to deepen their collaborations. More than £70 000 of additional impact accelerator funding supported the work of nine staff (five women, of whom one BAME), including facilitating the UNESCO partnership, HE system reform in Zimbabwe and national work with the #WomenEd movement, as well as more locally focused activities with schools, museums and communities. Faculty REF funding facilitated impact work with a variety of partners, including the Royal Shakespeare Company, Education International, UNESCO and Tate. The School collaborated with the University's new Institute for Policy and Engagement (see Institutional Statement), in running global public policy masterclasses featuring international education leaders, including the former UNESCO Assistant Director-General for Education.

We encourage staff to respond to requests for policy advice. Where requests cannot be dealt with quickly through the normal research contracting processes, staff are mandated to take on such work through consultancy. School funds are also used to support staff to travel to provide expert advice to a range of partners. Through such mechanisms, staff have advised a range of policy actors including the Arts Council, DfE, the Girls Education Challenge, the Cabinet Office, the Commonwealth Secretariat, ILO and the EU.

The development of our impact work also was supported by the Faculty appointment of an impact officer. Staff have participated in university-wide REF impact training workshops. A part-time School impact officer was appointed in 2019 to support the development of case studies' evidence trails; she also worked more widely to develop broader staff awareness of impact. We have encouraged staff to participate in Faculty and University workshops focusing on theory of change approaches and on pathways to impact.

The School's flagship international impact relationship is with UNESCO. Building on a 4* impact case study from REF2014, the relationship was further developed, with the aim being to make this more institutionalised and sustainable. The School invested staff time and travel resources into this, resulting in joint activities with 22 other UNESCO affiliates and the generation of more than £9m funding for these collaborations. **McGrath** became the new UNESCO chairholder, building on a secondment to Paris during the previous REF cycle. Nottingham joined the UNESCO-UNEVOC global network of specialist vocational education centres, with **Wedekind** coordinating its European cluster. The School hosted a cluster meeting on skills and migration in 2019. **Hall, McIntyre** and **Thomson** supported Nottingham's designation as a UNESCO City of Literature, awarded in 2015, and the School is the British partner in the UNESCO-affiliated

European Network of Arts Observatories. **Bush, Henderson, Holford** and **Walton** also were active in work for UNESCO during the period. As well as regular staff visits to UNESCO in Paris, Bonn and Hamburg, the former Assistant Director-General and the present directors of the UNESCO Institute of Lifelong Learning and of Lifelong Education Policies and Systems were active honorary School staff. All visited Nottingham during this REF period.

The expert group that produced the major UNESCO vision document, *Rethinking Education* (2015) was co-chaired by **Morgan** (now retired). Nottingham work has been acknowledged as seminal to the current UNESCO *Technical and Vocational Education and Training Strategy*, and the School has been commissioned to support the new *UNEVOC Medium-Term Strategy*. Staff and students wrote background papers for both the 2018 *World Youth Report* and the 2019 and 2020 *Global Education Monitoring Reports*. As noted in Section 2, students were highly active in working with UNESCO.

Future plans: The school has been prudent in its decision making during the COVID pandemic and is able to reshape its staff base and increase its REF-eligible staffing further during 2021. Through recruitment to these posts, and through support to early career fellowships, we will actively seek to recruit ECRs with strong income generating potential, to address the racial diversity of our research-active staff, and to invest in new staff's career development.

To realise the Faculty plan of doubling research income and increasing the proportion of income from UKRI, from spring 2020 we have adopted a lifecycle approach to focus on developing staff capability to bid. The possibilities of fellowships and large grants appropriate to the career stage will be identified two-to-three years in advance where possible, and the route to submission mapped out, with mentoring and funding support where necessary. As soon as possible, we will restart using seedcorn money and research development time to support early stage bid work.

As noted above, a key set of more applied funders remain important sources of income for the School. We will continue to build sustainability into these relationships by investing in relationship management, appointing new staff with the right skills set to bid for such work and bringing more junior colleagues into these bids with a view to accelerated graduation to PI status.

The DoRKE, charged with increasing School participation in large bids led from elsewhere in the University, will continue to liaise closely with research business development officers across the University so that Education is approached earlier and more often in bid development, as well as being better able to attract partners to its bids.

The lockdown period saw a range of research support activities move online, as well as several projects develop innovative methodological and managerial responses to researching under new conditions. Once we begin to exit lockdown, we will review the lessons of these, considering which promising practices from this period should be continued and disseminated.

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

As noted in Section 1, the School's *RKE Strategy* is concerned with research that promotes social transformation. In pursuit of this, we encourage an extensive range of engagements with local, national and international partners and stakeholders, overseen by the RKEC and DoRKE, funded through several mechanisms.

Supporting the University's scholarship of teaching or learning (SOTL): As befits a School of Education, we seek to inform teaching and learning across the University. Four particular contributions to promoting and supporting SOTL are noteworthy here.

First, and responding to analysis of the relative absence of higher education pedagogy research in REF2014, the School led the development of a university-wide Educational Inquiry Network. Launched in 2017, it aims to provide an emergent network for staff to discuss educational issues and inform their own practices through inquiry. It has held biannual half-day seminars and a

larger number of smaller meetings, including reading groups. Staff from across the University have attended its events. Faculty level teaching development communities have formed as a result in Medicine & Health Sciences and Engineering. More than 60 staff have attended workshops on writing education papers. The August 2020 appointment of SoE Professor **Speight** as PVC: Education and Student Experience will reinforce the flow of pedagogical research across the University.

Second, in 2018, the PGCHE team moved into the School to maximise the interaction between the programme and higher education-oriented research in the School. To support this, we established a research and practice forum to bring together PGCHE staff, Centre for English Language Education staff and those researching international higher education. In 2019 School of Education staff tutored 116 members of staff, from all faculties and campuses, on inquiry projects to enhance their understanding of their teaching practice.

Third, new appointments to CIER (**Henderson, Hordosy, Myers, Katartzi**) have begun to bring research knowledge about current HE issues, such as widening participation, EDI and pedagogies for internationalisation and decolonisation to wider University processes.

Fourth, the EdD programme has increasingly focused on HE practitioners in teacher education, allied health professions, and central service units, such as the Leadership and Management Academy, from across the East Midlands.

Local community engagement: The School has always seen itself as embedded in the city and contributes strongly to the University's wider civic commitment (see the Institutional Statement). In 2013, seven Nottingham City secondary schools were rated inadequate by Ofsted. In response, the City established an Education Improvement Board, chaired by the then Vice Chancellor and including the then Head of School from Education, **Hall**. Since then, we have been active in supporting its work and that of the D2N2 development initiative that covers the cities of Nottingham and Derby and their adjacent counties. This is a major priority given the levels of socio-economic deprivation in our local communities. The School has supported county and city inclusion initiatives including researching the state of special education needs provision and the extent and nature of home schooling. We have engaged with more than 150 schools, and over 20 multi-academy trusts and teaching school alliances in the region, as providers of initial training and continuous professional development and learning, governors, research collaborators, etc.

To better coordinate the post-qualification aspects of this wide-ranging and long-standing work, the School set up a CPD Unit in 2017 with the mission to provide a variety of opportunities for teachers and school and education leaders. This work is intended to support the development of skills, apply the expertise of our staff, generate income, enhance partnerships and awareness, and build knowledge for all partners. We have developed and delivered face-to-face: strategic workshops with leadership teams (e.g., mathematics, literacy, inclusive education); customised consultancy/training (literacy champions, mathematical thinking and challenging topics in maths, inclusive education, inclusive strategies for maths classrooms, and reading consortium evaluation); one-day conferences for new and recently qualified teachers in the East Midlands; and a twilight masterclass series for school leaders (successful school leadership, and leading research and evaluation cultures). This offer draws deliberately on the School's research work as an engagement process. In 2020, **Crook** founded <https://researchingeducation.com>, a free site summarising recent educational research articles for teachers.

Beyond the school sector, CRHF provides training for NHS Trusts across the East Midlands and East of England. Its Human Flourishing Project provides a free counselling and psychotherapy service to the city; it is a research laboratory that also acts as a training centre for postgraduate psychotherapy students. The School works with the local further education sector, providing a governor to one college; delivering sessions for staff and students in two others; and participating in the East Midlands Learning Skills Research Network. As noted in Section 3, staff contribute to Nottingham's UNESCO City of Literature activities, and work in partnership with

several local cultural and heritage organisations, such as Nottingham Contemporary, which has co-funded a PhD. We have worked with other local organisations, such as the Nottingham and Nottinghamshire Refugee Forum, and various structures representing the Nottingham Chinese community as part of our commitment to serving diverse local communities.

National engagement: School staff are involved in a wide range of policy initiatives, as well as serving on national committees and learned society structures, contributing to professional and disciplinary sustainability. Staff interact regularly with government departments, most notably DfE, DFID and DoHSC. **McGrath** serves on DFID/FCDO's Scientific Advisory Group. **Corcoran** serves on the What Works Trial Advice Panel, supporting evidence-based policymaking across the civil service. **Myers** is a member of the Traveller Movement Education Committee and he, **Murphy** and **Thomson** have advised All-Party Parliamentary Groups. The 14 EEF projects, plus those commissioned directly by the DfE, led the School's research to have considerable influence on national education policy and practice.

Holford was joint secretary/research director of the Centenary Commission and chair of the Adult Education 100 campaign steering group. The Commission published its first report in November 2019 marking the centenary of the Ministry of Reconstruction's *Final Report on Adult Education*, a report that led Nottingham to establish the world's first Chair of Adult Education. **Wake** served on the Commission on Sustainable Learning for Life, Work and a Changing Economy, and the School hosted one of its national consultation meetings. **Noyes** is the chair of the Joint Mathematical Council, an umbrella body that convenes all those associations and bodies concerned with mathematics education. He also previously served on the Royal Society's Advisory Committee on Mathematics Education.

Morgan chaired the UK National Commission for UNESCO. Between 2015 and 2017, **McGrath** was the chair of the United Kingdom Forum for International Education and Training (UKFIET), an organisation that brings together the British universities, NGOs and consultancies working on education and development. Since 2017, he has been an UKFIET trustee.

Stevenson has had a long association with the National Union of Teachers and the Association of Teachers and Lecturers. His work contributed to informing strategy in both unions (now amalgamated into the National Education Union, Europe's largest education union). He worked (with **Amsler**) to develop networks of young teachers connecting research, ideas and activism, including Ideas for Activist Teachers and NEU reading groups. **Fuller** played a leading role in the development of #WomenEd – a network for female leaders in education that has grown into an international movement.

Greany served on the School Improvement Commission. **Joseph's** tool to assess young carer needs has been adopted by dozens of local authorities. **Thomson** and **Hall** have had a wide range of national partnerships with arts and cultural organisations. **Thomson** supports the work of Tate Learning through mentoring, joint research and writing and ongoing participation in programming; and is on the Tate Learning Research Centre board. **Hall** worked with the Royal Shakespeare Company on research strategy. **Thomson** chaired the research committee of the ABRSM Music Commission and was a research consultant to the Durham Commission on Creativity. **Mills** chairs the Academic Advisory Board at The National Holocaust Centre and Museum.

The School has contributed to teacher education nationally by sustained representation on the University Council for the Education of Teachers primary, secondary and management committees. The School was a founder member of the Russell Group Teacher Education Forum, and **McIntyre** is its chair. She is also the East Midlands representative on the DfE's National Initial Teacher Training Advisory Group. Key roles in the counselling sector include **Winship's** chairing of the Training Standards Committee for the Universities Psychotherapy and Counselling Association.

International engagement: The School has worked with many international actors, including several UN agencies. **McGrath** and **Wedekind** contributed background papers to the *Global Education Monitoring Report* and the *World Youth Report*, as part of the wider UNESCO relationship. **Morgan** co-chaired UNESCO's Senior Experts' Group on *Rethinking Education in a Changing World*. **McGrath** was lead author of the *Commonwealth Education Policy Framework*, collaborating with ministers and senior officials from member states to produce a framework adopted at the 2018 Conference of Commonwealth Education Ministers. He was the senior scientific advisor to a £50m British-German-Norwegian aid programme in East Africa.

Thondhlana and **McGrath** have worked extensively on supporting the transformation of African higher education. Together, they have collaborated with colleagues at 30 African universities, the Association for Research Managers and Administrators, the Zimbabwe Council for Higher Education (ZIMCHE) and the Kenyan Association of Manufacturers. Internally, they partnered with the Schools of Biosciences, Chemistry, Pharmacy and Sociology & Social Policy. The ZIMCHE partnership resulted in the team's recommendations on internationalisation of higher education receiving Cabinet approval in Zimbabwe. In 2015, **McGrath** and South African colleagues were awarded an Elsevier Atlas award for research impact for their work on higher education and development.

Researcher development internationally was supported by **Thomson** through her books and weekly blog, *Patter* (over 30 000 followers). 2020 saw the launch of a new co-edited book series, *Insider Guides to Success in Academia*, which offers support and practical advice to doctoral students and early career researchers. 13 books have been commissioned already. In response to COVID-19, in March 2020 she co-launched @VirtualNotViral to support PhDs and ECRs working at home and having to rethink and redesign their research. As well as a website, they hold a weekly twitter chat with guest speakers and have over 5 000 followers. **Amsler**, **McGrath**, **Thomson** and **Thondhlana** have led writing and research development workshops on four continents.

As well as his work with the National Education Union noted above, **Stevenson** collaborated with the global teacher union confederation, Education International, and its European regional organisation, the European Trade Union Committee on Education, to inform their engagements with international and national education policy initiatives. Work related to social partners' involvement in the European Semester directly resulted in changes to the Semester process. Staff were involved in education policy advice at national levels in New Zealand, Saudi Arabia (**Greany** – both) and South Africa (**McGrath** and **Wedekind**).

Crook is chair of the Hong Kong RAE2020 panel for education and has been advising Chinese universities on how to develop education research strategies. **Holford** is also on the HKRAE2020 panel, and chair of the Masters' Degree Validation Committee for the Cyprus Higher Education Commission. He is President of the International Society for Comparative Adult Education. **Oliver** has been Vice-Chair of the International Biology Olympiad, an international competition for gifted upper secondary school students designed to promote interest, excellence and curiosity in Biology.

Professional and disciplinary engagement: School staff contribute to wider disciplinary sustainability. This includes leadership roles in professional associations and learned societies. For instance, **Gu** chaired BAICE, 2016–18, and **Bush** is President of the British Educational Leadership, Management and Administration Society. **Murphy** is chair of the scientific committee for the 2022 World Conference on Person-Centred and Experiential Psychotherapy and Counselling.

Staff held editorships of 22 international journals during the REF period (144% increase), whilst several others served on journal management and international advisory boards, including for several journals in the Global South. 14 staff acted as peer reviewers for research councils and other funding bodies in 17 countries (27% increase). School staff held 30 adjunct posts at universities in 14 countries including Australia, China, Russia and South Africa. The School

hosted five major international conferences. Four staff are Fellows of the Academy of Social Sciences, and **Day** was awarded an honorary doctorate by the Education University of Hong Kong.