Institution: University of Lincoln

Unit of Assessment: 23 Education

1. Unit context and structure, research and impact strategy

(A) Context and Structure
The Education Unit of Assessment (UoA) at the University of Lincoln is based in the School of Education, and contains two research groups which are centred on, firstly, primary and secondary education and, secondly, further and higher education respectively. The latter group also includes work undertaken by the Lincoln Higher Education Research Institute. The School of Education is one of six schools within the College of Social Science (see institutional environmental statement). The composition of the UoA has altered fundamentally in terms of staff, structure and focus since the last REF submission in 2014 which focused on the University's Centre for Educational Research and Development, which was designed to promote curricula innovation in teaching and learning via engagement with research, and act as an independent centre for doctoral educational research. The School of Education was set up in 2015, subsuming some activities of the Centre for Educational Research and Development. The dissolution of the Centre and the subsequent creation of the new School saw substantial personnel changes, as senior staff left and were replaced by newly recruited junior staff. The need to ensure the new School's financial viability necessitated a fundamental shift away from the Centre's pure research focus towards a more even balance between teaching and research activities. Hence, there was a broadening and updating of existing postgraduate provision. A new PhD (Professional) award replaced the existing EdD, and a new Masters programme was established, along with two PGCE School Centred Initial Teacher Training (SCITT) programmes. Additionally, at undergraduate level, two new degree programmes in Education, and Education and Psychology, were launched in September 2018.

Hence the personnel and overall research profile for the 2021 UoA is completely different from that of 2014. The 2014 submission included four Professors and a Reader, all of whom subsequently left; moreover, of the 5 staff being submitted this time around, only two (Karran and Winn) were entered in the previous submission. The changes in status (from Centre to School), course portfolio (new post-graduate and undergraduate programs) and academic staff (replacement of senior staff by ECRs) have been reflected in the emergence of two new research groups which highlight current strengths and future areas for research excellence, viz.:
   a. Primary and secondary education – specifically focused on science education (Bailey, Callinan, Childerhouse, Fotou, Johnston, Lopez, Sharpe)
   b. Further and higher education – centred on the co-operative movement in HE, student motivation and academic freedom (Karran, Sharp and Winn).

The impact of this profound shift in operational emphasis has affected the progress of the Education Unit of Assessment, with respect to achieving some of its research objectives set out in the REF2014 Submission. In particular, there are 5 FTE academic staff being returned in REF 2021, compared to 6.6 in REF 2014, or around 24 per cent lower. Despite fewer staff, total research income actually increased by 4% from £1,663,677 to £1,729,020 in the current census period. Per capita, research income was £345,804 per FTE being returned, or 38% higher than in the previous REF period (when it was around £250k per person).

(B) Achievement of Research Strategy
In the 2014 submission the Centre for Educational Research and Development had five key priorities for the next five years. Considerable progress was made towards achieving these goals. However, the change in the personnel of the UoA, and the creation of the School of Education in 2015, has led to a change in emphasis. The key priorities were to:
(i) develop the research groupings, and attract PhD and EdD students. Following the arrival of new staff, a new research group in Primary and Secondary Education was created, which reflected the teaching and research interests of incoming staff. The number of post-graduate students was sustained by replacing the EdD award by a new PhD (Professional) degree, and

the creation of a new Masters' degree, which is design to act as a feeder to the doctoral programme. The School of Education now has the largest doctoral cohort in the entire University. Post graduate recruitment has remained buoyant. Despite the reduction in staffing, the number of postgraduate students has remained stable (83 in REF2014; 81 in REF2021), while the number of doctoral completions has risen sharply. In the last REF period there were 14 doctoral completions, this has more than doubled to 38 in the current reporting period. This improved completion rate was achieved through a strategy of targeted support for doctoral students, delivered via the School's Doctoral Study Schools, in February, July and October, allied to better tracking of students' progress.

(ii) support the proportion of staff who are research active through on-going and targeted support for all staff. All staff produce annual Individual Research Plans, in which progress is assessed and targets agreed. These are supplemented by one-to-one bi-monthly progress meetings between each member of staff and the School's Director of Research. Additionally, there has been a series of School workshops at which staff from outside the School have provided training on (inter alia) writing grant applications for ESRC, Leverhulme, Nuffield, etc. During the audit period nine new staff were recruited to teach on the new degree programmes; two of these staff have been included in the current REF submission. Once the new School has achieved critical mass, in terms of student numbers, there will be greater emphasis on increasing the proportion of staff employed on research profiles.

(iii) continue to raise the proportion of international outputs – this has been achieved by supporting staff to produce high quality research outputs, including via a process of internal review of grant applications and publications, and greater engagement internationally. This has resulted in Inter alia) two Marie Curie Scholars (from Germany and Ghana) working in the School during the submission period, leading to papers in international journals like the *Vanderbilt Journal of Transnational Law,* the *European Journal of Comparative Law and Governance*, and the *Journal of Higher Education in Africa.* Additionally, the possibility of developing new international networks has been increased by recruiting new academic staff from Ireland, Greece, Mexico and New Zealand.

(iv) maximise grant income for excellent research by targeting revenue streams within and outside the UK. This has been achieved by successfully targeting EU grants awarding bodies– three of the major research projects developed within the School during the submission period were funded by the Erasmus + Programme and the Marie Skłodowska-Curie Action. The number of bids in the REF2021 period was 47, of which 31% were successful. In total, around 40% of grant income during the period was from the European Union.

(v) increase our engagement with policy makers and other NGOs to maximise the full impact of our research. As part of its impact strategy, during the submission period, the School was pro-active in seeking engagement with potential users of its research. This strategy has led directly to significant high profile impact at UK and EU levels.

Karran's research into academic freedom in the EU, funded by a Marie Skłodowska-Curie Action grant, led the University and College Union to commission a study of the health of academic freedom in the UK HE sector, as reported by its members. Karran's report for the UCU, recommended an appeal to the joint ILO/UNESCO Committee of Experts on the Application of the Recommendation concerning the Status of Teachers, that the level of legal protection for academic freedom in the UK was below that advocated by UNESCO's 1997 *Recommendation on the Status of Higher Education Teaching Personnel*, of which the UK is a signatory state. This recommendation was accepted at the Union's Annual Congress in May 2017, and Karran wrote the UCU's Submission to UNESCO, which was tendered in January 2019. The UK government responded in May 2019, and Karran then help to draft the UCU's reply which was sent to UNESCO in September, 2019. In February 2020, ILO/UNESCO Secretariat advised the UCU that they were still awaiting the UK Government's final commentary, which had been delayed owing to turmoil in the UK government, and needed approval from the new Minister of State for Universities. In 2009 Karran had helped the Danish Academics' Association (Dansk Magisterforening) make a submission to UNESCO, which directly led to a change in the law on academic freedom in Denmark.

As a result of the work for the UCU, in May 2019, Karran was invited by the Committee on Culture, Science, Education and Media of the Council of Europe to prepare an expert report on *Threats to academic freedom and autonomy of universities in Europe*. The resultant report recommended that the Parliamentary Assembly draft a Council of Europe Convention on Academic Freedom, as a preliminary step for authorising a new protocol on academic freedom to the European Convention on Human Rights. This report was accepted by the Committee in October 2019, and accepted and approved by vote on 20th November 2020 by the Standing Committee of the Parliamentary Assembly of the Council of Europe, at its meeting in Strasbourg. The recommendations now go to the Council of Ministers for implementation.

Winn's work with the Co-Operative College in Manchester led to plans for the creation of the UK's first co-operative university. Development work was undertaken in collaboration with the Mondragon Co-operative University in the Basque country in Spain. This work led directly to the Co-operative College successfully applying through the Office for Students for probationary degree awarding powers, as the first Co-Operative University in the UK, although this work has been delayed due to the Covid-19 pandemic.

(C) Research and Impact Strategy
During the next five years, the School's overarching aim is to achieve a reputation for world class research, known for its rigour, originality, quality and reach, which both makes an important contribution to the body of knowledge in the field of education (as evidenced by increased grant income, growing production of 4* papers and stronger post-graduate recruitment), and also delivers impact, via high level engagement with policy making organisations. To achieve these twin aims of quality research and impactful engagement, the School has identified the following five strategic aims:
(i) Continue to develop the research expertise within the two existing research groups by making appointments when possible, in these in areas, but also build on the expertise of recently appointed staff and provide support to create new research groups in the areas of (inter alia) Special Educational Needs, linguistics and science education.
(ii) Maintain the School's PGR numbers and use student feedback to enhance the completion rate, in order to foster a vibrant and growing doctoral alumni community, which will generate further growth in student numbers and improvements in the School's reputation, by means of personal recommendations.
(iii) Build on our success in external income generation. Firstly, by mentoring the School's new early career researchers in making major research grant applications, to funding bodies within the UK, but also within the European Union and beyond. Secondly, by diversifying sources of research funding, by making bids to an array of charitable foundations, like the Paul Hamlyn Foundation and the Volkswagen Foundation.
(iv) Greater Commitment to Inter-disciplinary/Multi-disciplinary Research. To enhance its research profile, and enable the development of new areas of impact, the School will widen its disciplinary base, via further development of new research groups (as indicated in aim (i)), and engage in cross-school collaboration, for example, with the School of Psychology, and the Lincoln Institute of Health, in undertaking research to combat childhood obesity in Lincolnshire.
(v) Greater collaboration and partnerships. The School is currently leading two major collaborative research projects funded by the Education Endowment Foundation (Improving Science Education – the ASCENTS 1-2-1 project) (with Leeds, Liverpool, UCL IoE and York as partners) and Erasmus+ (Assessment Companion for Thinking Skills) involving partners across the UK and in Finland and Latvia. Further strategic collaborations will be sought to help achieve research aims (i) and (iii). For example, work is underway to examine the state of academic freedom in Latin America, in conjunction with UNESCO's International Institute for Higher Education in Latin America and the Caribbean.

Following this period of rapid expansion of course provision and staff, the next phase of our research development will involve the growth of the research base by means of targeted support and advice for all research active staff. This will be achieved by:
- Utilising workload planning to ensure that all staff have sufficient time for research.

- Bi-monthly one-to-one "research, enterprise and impact" meetings between staff and the School's Director of Research, to provide on-going individual support and guidance
- Supporting staff in seeking resources to develop research activities, via the increased use of seed corn funding at College level.
- Developing grant application expertise and supporting bid writing through writing retreats, research workshops (covering, inter alia, developing and harvesting research impact, using parliamentary links for impact, generating consultancy income, bidding for ESRC and EU funding), allied to an internal peer review mechanism.
- Creating new research collaborations to facilitate interdisciplinary research, more especially on the back of the new Education and Psychology undergraduate award, and via development of existing collaborative research projects.

(D) Approach to Enabling Impact
The approach to enabling impact within the School has been both strategic and pro-active, and has been guided by the University's and the College's strategy. Individual Research Plans produced by staff now record impact-related activities and provide support for impact-related activities. Additionally, the College of Social Science has provided additional resources for the development of School impact, enabling good links to be forged between the School and the University's Director of Research Impact Development. A School Impact Manager, who dealt with describing impact in the last submission, has acted to co-ordinate impact activities, including guidance and be-spoke workshops provided by the University's Director of Research Impact Development, to grow and nurture the impact activities undertaken by staff in the School by means of the sharing of experience and the development of best practice. This is especially important, given that the majority of School staff have had little experience of attempting to develop impact from their research.

As the School grows in size and stature, support from College and the University's Director of Research Impact Development, will be sought to enable further research impact to emerge and be developed. The School's impact management strategy is centred on a commitment to engaged, applied research, which contributes to improving the world we live in, by driving forward education enhancement and elevating professional practice. In pursuit of this strategy the School is committed to the following goals in order to achieve impact:
1. Produce first-rate academic research to enable practical real-world solutions to current problems within the educational sphere.
2. Increase public awareness and understanding of our research and disseminate it to relevant stakeholders and professional and practitioner communities, and the broader public at large.
3. Broaden our collaboration and co-production of research with national and international partners, including non-governmental agencies, schools and universities, and charitable organisations.
4. Understand the needs of our professional and practitioner communities and provide solutions that directly respond to their needs and thereby deliver impact and address broader societal goals.
5. Encourage interdisciplinary enquiry within (and beyond) the University in order to address and solve complex issues via a multidisciplinary approach.

2. People

(A) Staffing strategy and staff development
The School's research strategy for staff is premised on building critical mass to enable the staff to fulfil their potential as leading academics in their respective fields. The relatively small size of the School enables research information to be shared easily and promotes joint working. In fact, many of the outputs produced within the School are joint authored, and during the audit period 18 peer reviewed papers were produced by REF eligible staff, in conjunction with other members of staff, working either in the School, or elsewhere in the College of Social Science. Furthermore, successful research bids have been used to generate grant income for projects in which other staff are encouraged to participate, with the hope, and intention, of producing high

quality joint authored research outputs. For example, Sharpe is Principal Lead for Lincoln in the Education Endowment Foundation funded ASCENTS 1-2-1 Asymmetrical academic paired mentoring project team, which is being led by Abrahams as PI.

This approach to research staff development has three key elements. *First,* to increase the proportion of academic staff producing research outputs of the highest quality by providing mentoring and support to those staff who are ECR and hence have limited experience of producing research outputs. Consequently, emphasis is placed on mentoring staff to nurture research talent, and support colleagues to build on their previous doctoral work in a way that promotes engagement in the research process. All staff in the School have PhDs and disseminating outputs through publications and conference papers based on doctoral theses is strongly encouraged. A system of mentoring and joint authoring is available to support Early Career Researchers, seeking to publish in peer-reviewed outlets. *Second*, to ensure that more experienced staff are able to support new staff in order to maximise their research outputs, strategic recruitment of new staff has been designed to enliven and enhance, the research culture and highlight new areas of research strength within the School. *Third*, to enrich the research environment, by the recruitment of new staff and postgraduate students, and through a system of sabbatical research leave being developed via the College. The recruitment of new staff has accompanied a concerted attempt to increase the number of postgraduate students recruited both within UK and, more especially, from abroad, in order to enhance the School's global reputation for high quality postgraduate teaching. Within the submission period, the School has recruited PGR students from (inter alia) Algeria, China, Germany, Ghana, Ireland, Kuwait, Libya, Malaysia, Malta, Nigeria, Saudi Arabia and Vietnam. The growth in the number and diversity of national and international students, allied to the increase in staffing, has helped create a vibrant and active research environment, in which both staff and students are encouraged to produce research outputs. The benefits of this research strategy is evidenced by the number and national diversity of currently registered and completed postgraduate students on the doctoral programme.

With respect to staff development, all research staff returned in the UoA have a day each week devoted to research activities and impact development. Additionally, as has been indicated, staff develop Individual Research Plans, which are revised yearly, as part of a mentoring relationship, with the School's Director of Research. This collaborative process of reflection enables staff to deliberate on, and assess, their research and impact achievements of the past year, in the light of the previous IRP, and then plan and prioritise their proposed research activities for the coming year, in alignment with the School's research priorities on the generation of research income, the production of research outputs and their dissemination via conference attendance, and the creation of impact. To provide support, during the year, advice and guidance is given in bi-monthly one to one research, enterprise, and impact meetings, between the Director of Research and individual staff. Internal and external training on aspects of research is available at University and College level, and staff are encouraged to attend. Additionally, School Research Awaydays are scheduled with all staff, these have focused on (inter alia) making research bids, preparing for the REF 2021, and developing impact, and have involved external speakers from other Schools, and also the university's Director of Research Impact Development.

As was previously indicated in the Overview Section, during the REF audit period, the creation of the new School of Education, and the new academic programmes that it subsequently inaugurated, completely altered the research profile of the UoA. New staff appointments cover a range of research areas including Special Educational Needs, linguistics and science education, and have significantly enhanced the School's research profile. These ECR recruitments have broadened the range of topics available for doctoral supervision, thus enabling increased recruitment of post-graduate research students. Hence providing research and impact support is a central part of the School's career development strategy for Early Career Researchers. ECRs are provided with early opportunities to deliver papers at the School's triannual Doctoral Study Schools, and are encouraged to join the supervision team of PGR students, along with more

experienced staff. In addition, all staff are encouraged and financially supported through the School, to attend international conferences, and present papers.

(B) Research students
A significant element of the School's research profile is its large and successful doctoral programme. This includes PhD by thesis (full and part time) the EdD (part time) its replacement, the PhD (Professional) which was launched in 2017, with a new MA award. The table below shows the number of students *currently* on the roll, and the number that have been recruited and completed since the 2014 REF.

		UK	EU	Overseas	On Roll
EdD (p/t only)	Enrolled (New)	11	9	0	1
	Completed	12	10	0	
PhD (thesis - ft)	Enrolled (New)	3	1	6	13
	Completed	1	2	10	
PhD (thesis - p/t)	Enrolled (New)	8	2	0	15
	Completed	0	2	0	
PhD (Prof) (p/t & f/t)	Enrolled (New)	5	3	0	37
	Completed	0	1	0	
	Total				66

Students are drawn from 13 countries with research interests in both the statutory and post-compulsory sectors. The School has an established system of supervisory support for research students, all of which is supplemented by materials available through the University's Blackboard VLE. The number of completions has accelerated in recent years - in both 2011/12 and 2012/13 there were three doctoral completions, but since 2014 there have been 13 PhD and 23 EdD/PhD (Prof) completions, and this figure is set to rise. Postgraduate students can access an array of teaching and training opportunities to help them develop the full range of research skills required in their work, including:
- Residential study schools (two weekends, and two weeks each year, in both Lincoln and Mayo), which are available to all students, but focused on the part-time study mode.
- Bi-monthly School of Education doctoral student research seminars, attended both on-line and on campus.

In addition, all students are provided with the following courses by the University's Doctoral School:
- Three Researcher Education Programmes, per annum .
- Cross-disciplinary classes in methodology from across the College of Social Science.
- Generic training for research students – a range of specific stand-alone sessions provided by the Doctoral School.

The Education UoA has been able to increase its rate of PGR completions and augment its PGR community by enhancing its support structure for PGR students at School level. After 4 months (8 months for part-time), all doctoral students submit a Confirmation of Studies (drawn up in collaboration with their supervisors), which details their research projects, confirms their supervisory team, and addresses possible ethical issues. Additionally, all doctoral students complete an annual training needs analysis, which identifies any gaps in students' skills and recommends ameliorative actions. The Research Development Needs Analysis training programme at Lincoln is built around institutional membership of the Vitae Researcher Development Framework, which is run by the Careers Research & Advisory Centre.

Students' Confirmations of Studies are discussed with the School PGR Lead, and the supervisory team to provide feedback, and scrutinized in the Schools PGR Committee. Transfer to PhD from MPhil status takes place at the end of the first year's study for full time students (two years for p-t) when doctoral students submit a portfolio of work to a panel of three staff

members who consider the student's progress and provide detailed feedback. All PGR students submit annual monitoring reviews, feedback is provided by the School PGR lead and the supervisory team, and progress is reviewed by the PGR Committee. PGR students are frequently consulted about their experience and feed ideas into the PGR programme, both directly and via their representatives and at meetings of the subject committees which are held during the Doctoral Study Schools. Support is provided for PGRs wishing to gain teaching experience, while academic career development and training is furthered by encouraging current (and past) students to present their research at the Doctoral Study Schools. Similarly, support is provided with presenting conference papers or publishing, with a growing number of students publishing in academic journals, with papers jointly authored with their supervisors. The School's Doctoral community has also been enriched by visiting scholars who have come from Africa, Europe and Russia to Lincoln to work with staff in the Unit. Additionally, the School's PGR room provides dedicated desk space, lockers and IT facilities for students. In sum, this portfolio of activities and opportunities provides comprehensive support for doctoral students' career progressions.

(C) Approach to supporting equality and diversity

The School of Education has a strong profile of gender equality and inclusiveness, but is aware of the School's lack of ethnic diversity. Currently 73% of the full-time academic staff of the School are female, and women constitute 40% of the UoA but while 36% of School staff are non-British, only 18% of staff are from the BAME community, and this is an issue that the School recognizes the need to address. However, the relatively small size of the school also presents an opportunity for all School members to gain valuable experience, by undertaking leadership positions and committee memberships; notably, all members of staff hold positions on committees, not only within the School but across the wider university. This representation helps promote the development of managerial experience and administrative skills, thereby promoting career progression opportunities for all members of staff. It is the School's intention to strengthen its current policy of equality and diversity, by, for example, ensuring that staff are aware of their entitlements for taking maternity/paternity leave as appropriate, including shared parental leave and pay. In the medium and longer term, female staff will be encouraged and supported to apply for more senior positions in the School, by means of personal development plans.

The University's broad, collaborative approach to equality, diversity and inclusion is led by a cross-university centre – the Eleanor Glanville Centre (EGC). The EGC coordinates the institutional engagement with the Equality Challenge Unit's Athena SWAN / Gender & Race Equality Charters, and provides centralised support through sharing best practice. In line with the University's institutional Bronze award, the EGC is supporting the School of Education in moving forward to achieve Athena Swan Bronze status. At induction on appointment, and via mandatory training, new staff in the School are also introduced to the University's Wellbeing services, which are available through drop in sessions, but can be accessed remotely. Support for staff and PGR students returning from leave (sickness, parental and care responsibilities) is available through the Pipeline Mentoring Scheme (as detailed in the university environment document), which includes 'maternity mentoring' and 'work-life balance' support pathways, alongside the more usual career progression support. Respecting University policy, academic staff can request flexible working arrangements, and School Heads are encouraged to respond sympathetically and work to achieve mutually acceptable solutions with staff.

This strong degree of gender equality is also present in School's student population. The majority of the School's students are female - 74.5% of Postgraduate Certificate in Education (Primary) students, 78.5% of EdD students, 70% of PhD (Professional) students. The School of Education has a greater proportion of female PGR students than the sector average. The School recruits approximately twice as many part-time PGR students as full-time PGR students, with between two-thirds and three-quarters (respectively) being women in 2015/16. A snapshot in 2015/16 revealed that 70.6% of full-time and 67.9% of part-time PGR students in the School of Education were women, in both cases being greater than the sector average (at 59.7% and 62.3%, respectively). Additionally, during the audit period, students have been recruited from

Algeria, China, Germany, Ghana, Kuwait, Libya, Malaysia, Nigeria, Saudi Arabia and Vietnam during the audit period, and the proportion of new PGR students who are BAME was 20%, which is not as low as that of staff, but the School recognizes that this needs improvement.

3. Income, infrastructure and facilities

(A) Strategies for research grant capture, and research infrastructure

During the REF 2021 reporting period 47 grant applications were made by the School of Education, of which 31% were successful. To improve on this achievement, there is a dedicated support structure to promote grant capture at School level, which is mirrored at college and university levels, and assists staff in the realisation of their Individual Research Plans (see section 2(A) under which resources are provided for national and international conference attendance and allied impact activities. Such conference attendance and dissemination activities enable staff to develop collaborative networks to thereby initiate international grant proposals, and staff aspiring to make such bids receive further support. Moreover, all School staff are encouraged and assisted to make applications for grant funding, as part of their IRP, and are aided in doing so by the provision of best practice examples of successful bids and expert advice from the School Director of Research. At School level all staff receive one to one mentoring through the IRP process, to develop their initial ideas to achieve grant generation and subsequent impact creation. As many School staff are recent appointments, many have ECR status and are, therefore, given specific support by means of workloading allocations to protect their time for grant bidding, research dissemination and impact generation. All bids are reviewed internally, and then blind peer-reviewed by two reviewers at College level, to provide detailed expert feedback, guidance and support.

At College level, support and guidance is also provided by the College Director of Research and the Business Development Manager and a dedicated administrator who assists staff in managing grants, and periodic reporting to funders, post-award. Further, the College Research Office organises intensive training workshops on bid writing (especially for ECRs), with experienced mentors available to support staff making their first bidding attempts. At university level, the delivery of Schools' research and external income targets are supported by the PVC for Research and the Research and Enterprise Team, with Research Officers and Business Development Managers for each College. The Research and Enterprise team provides an array of supportive activities, these include: providing bespoke guidance on costings for bids; advising staff through the process of completing and submitting bids to the major funders' on-line bidding systems; organising frequent training workshop on grant capture and impact creation; distributing details of new and current bidding rounds focused on the School of Education; facilitating opportunities to meet with, and listen to, representatives of national funding bodies, including Nuffield, Leverhulme and the ESRC; providing access to external consultants who provide advice on external bids; identifying potential partners for collaborative research; and maintaining a College-level database of successful and unsuccessful bids. Hence there has been sustained institutional support in the area of grant income generation. Research and external income targets are set annually, and delivery is supported by the PVC for Research and the University Research Office, with Research Officers and Business Development Managers for each College. In addition, each College has a Director of Research with a dedicated administrative support to lead and encourage a strong research culture. Within the College, each School has a Director of Research, who works closely with the support staff at College and University level.

(B) Research Income

Despite the large turnover of staff (many of whom were senior) following dissolution of the Centre and the creation of the School, total grant income held up very well and increased by 4% from £1,663,677 in the REF2014 period to £1,729,020 in the REF2021 period. The School of Education has used the support and facilities outlined above to obtain grants for its existing areas of strength, and to increase both the fields in which it wins research income and the range of award-making bodies from which it receives grants. Abrahams, for example, was successful

in winning an EEF/Wellcome grant of £615,312. This project was developed from an internally funded local paired mentoring project that produced statistically significant improvement in mentored Year 11 GCSE students' science results and generated significant national interest when the results were published. This led to the EEF/Wellcome extending the project to include four additional universities, (Leeds, Liverpool, UCL IoE and York) which will create a much larger, cross-country, impact for the research. Additionally, Wellcome reported that the fact that a large proportion of the undergraduate mentors in the pilot study went on to train to be local science teachers has raised government interest. Hopefully, the continued development of such impact, as the project proceeds, will provide a firm foundation for subsequent bids and a case study for the next REF. In addition, Backhouse won an EU Erasmus grant of €397,268, with six collaborators in Finland, Latvia and the UK. The three year project is centred on supporting teachers in improving pupils' thinking skills through student centred and problem based approaches in science and mathematics teaching.

Furthermore, School staff have also won awards, and small grants whose income is not reported through HESA, but which have contributed to developing the international and collaborative research culture of the UoA and its publications and impact strategies. For example, Winn received a small grant (£4525) from the Independent Social Research Foundation for further work on developing a model for co-operative high education, which forms the basis of one of the Education UoA's impact case study. Similarly, Karran was commissioned (£13,500) to undertake a study of academic freedom in the UK HE sector, which supported the development of the other impact case study within the Education UoA.

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

(A) Research Networking
Despite its recent creation and small size, the staff in the School are well-connected via an array of collaborative networks stretching geographically beyond Lincoln (as staff have been recruited from Greece, Ireland, Mexico and New Zealand) and to policy domains beyond the HE sector. These networks are central to the research publications and subsequent impact of staff in the UoA and relate both to its established area of expertise in further and higher education, and to new and emerging areas of strength in primary and secondary education, especially science education. As with impact, so with collaboration, staff are encouraged to devise plans for research collaboration through the development and implementation of Individual Research Plans and also promote a collaborative approach in grant capture, project management, publications' dissemination and impact generation.

The School's research activities have interdisciplinary resonance, and there is considerable collaboration between School staff and the other departments, both in the College of Social Science and across the university. For example Karran's work on legislative protection for academic freedom in the EU is closely aligned with human rights research in the Law School, while staff have also collaborated with researchers in a range of other institutions, including Abrahams's EEF project on Improving Science Education which includes the University of Leeds, University of Liverpool; UCL Institute of Education and the University of York each of whom will run an up-scaled version of the Randomised Control Test pilot, and will recruit seven secondary schools, 77 STEM undergraduates, and 154 disadvantaged students. Similarly, Backhouse's Erasmus+ funded project on Assessment Companion for Thinking Skills is developing strategic partnerships for school education and involves the Let's Think Forum (a registered charity of academics, teachers and tutors), the Carter Community School (a multi-trust academic in Poole) in the UK, the Department of Teacher Education at the University of Turku and the Kirkonkyla School in in Finland, and the TA Group (whose expertise includes teaching education, and the development of instructional materials), and the Daugavpils Russian Lyceum in Latvia.

(B) Collaborations with professional networks and associations:

School staff are well integrated into a variety of teaching and learning research networks and professional associations. During the REF period, Amsler was a Visiting Professor and Consultant for the Open Society Institute, for Budapest and Central Eurasian Region. Karran is a member of the International Academic Freedom Advocacy Team run by the international NGO, the Scholars at Risk Network, and head- quartered at New York University, which includes scholars from the University of Ghana, the Max Planck Institute Munich, the Niger Delta University, the Illinois Wesleyan University, the Université Saint-Joseph, Lebanon, Geneva University and Istanbul Bilgi University. During the audit period two members of the Scholars at Risk International Advocacy Team worked in the School as Marie Curie Intra-European and International Incoming Scholars. Abrahams is an active participant in the Institute of Physics and the European Science Education Research Association. All members of the School are accredited members of the Higher Education Academy, and are actively encouraged to seek the higher tiers such as Senior Fellowships.

(C) Research Dissemination and Impact Development

Staff have been invited to speak at a varied range of academic conferences, seminars and colloquia. For example, Abrahams gave invited keynote speeches in Ireland, at Maynooth University (on Making Practical Work Effective); in Seoul, South Korea at the KASE conference, (on Breaking the boundaries between 'hands-on' and 'minds-on' science); in Portugal, at the III International Symposium of Science Teaching at the University of Minho (on Motivating students towards science); and in Germany at the 23rd Symposium on Chemistry and Science Education at Dortmund University of Technology. Karran gave a invited presentations on academic freedom: at the University and College Union Annual Congress in Brighton; at the Forskerforbundet Forskningspolitisk (Norwegian Association of Researchers) Seminar in Oslo; to the Swiss Academy of Arts and Sciences in Bern; at the Council of Europe's Global Forum on 'Academic Freedom, Institutional Autonomy, and the Future of Democracy' at the Council of Europe in Strasbourg; the Global Public Policy Institute in Cologne; and at the Scholars at Risk Conference at Villa Decius, in Krakow. Winn gave keynote/plenary presentations at the Student as Producer Conference in Newcastle, and at the Reimagining the University Conference at Cheltenham. Sharpe was an invited keynote speaker at the ASE Annual Conference in Liverpool and at the Royal Institute of Great Britain.

(D) Academic Duty and Discipline Development:

School staff have played a growing role in the development of their disciplines. The majority of staff within the Centre undertake peer review duties for a varied array of academic journals including the *African Journal of Research in Mathematics, Science and Technology Education* (Abrahams)*, British Journal of Sociology* (Amsler), *Chemistry Education Research and Practice* (Abrahams), *Comparative Political Studies* (Karran), *Comparative Sociology* (Amsler), *Critical Criminology* (Winn), *Critical Education* (Winn), *Critical Studies in Education* (Amsler), E*liss: Enhancing Learning in the Social Sciences* (Abbas), *Higher Education* (Amsler, Karran), *Higher Education Policy* (Karran), *Higher Education Research and Development* (Abbas), *International Journal of Critical Pedagogy* (Amsler), *International Journal of Science and Mathematics Education* (Abrahams), *International Journal of Science Education* (Abrahams), *Journal for STEM Education Research* (Sharpe), *Journal of Education Policy (*Winn), *Journal of Research in Science Teaching* (Abrahams), *Journal of Research on Educational Effectiveness* (Sharpe), *Journal of Youth Studies* (Abbas), *Learning, Media and Technology* (Winn), *Open Library of Humanities* (Winn), *Power and Education (*Winn), *Prospects: Quarterly Review of Comparative Education* (Karran), *Research in Science & Technological Education* (Abrahams), *Science Education* (Abrahams), *Sociology* (Amsler), *Studies in Higher Education* (Karran), *Teaching in Higher Education* (Abbas), *tripleC : Communication, Capitalism and Critique* (Winn).

(E) Relationships with Research Beneficiaries

Through their research activities, school staff have had a major impact on an array of research beneficiaries. Abrahams's work in progress on the use of asymmetrical paired mentoring to improving GCSE science attainment amongst disadvantaged students has the potential to have an outstanding impact on secondary school students at both national and international levels.

Karran's work on academic freedom has moved thinking on the topic forward in many different countries and he was the author of an appeal by the UCU to UNESCO against the UK's legal protection for academic freedom and a recommendation to the Committee on Culture, Science, Education and Media of the Council of Europe, to draft an additional protocol on academic freedom to the European Convention on Human Rights. Abbas's project has provided insights into the challenges facing different student groups in higher education and contributed to the development of policy makers' approaches to widening participation. Winn's work on the creation of a Co-operative University, has been given additional impetus by the 2017 Higher Education and Research Act which enables the creation of new universities as challengers to current provision. The Co-operative College in Manchester used Winn's research to inform their application for Degree Awarding Powers to the Office for Students and as a part of his collaboration with the College, he supported their running of a national conference in 2017 on 'Making the Co-operative University'. In addition, Professor Mike Neary, who was included in the REF2014 but has since retired (though remains an Emeritus Professor), continues to work very closely with the Co-operative College, and has acted as Chair of the Interim Academic Board of the emerging Co-Operative University.