

Institution: University of the Highlands and Islands
Unit of Assessment: 23 Education
<p>1. Unit context and structure, research and impact strategy</p> <p>1.1 The context for educational research at the University of the Highlands and Islands</p> <p>The University of the Highlands and Islands is unique in being Scotland's only university that spans Further and Higher Education, and in being a federated university that comprises thirteen Academic Partners and a network of regional study centres across the entire Highlands and Islands region. This makes for a rich educational environment in which specialist site specific learning and teaching, blended learning, networked delivery of degree programmes that can be studied from any of the Academic Partners and online distance learning all co-exist, and often intersect. Within this setting, and reflecting the wider aspirations, ethos and structure of the university, key pedagogical themes at the university include student transitions into and through FE, HE and into employment, digital educational practices, and meeting the needs of geographically dispersed students including rural learners. These issues, and the geographically and digitally distributed nature of the institution, create a unique setting for educational research and are important dimensions of that research. To a great extent, this uniqueness of the university means it serves as its own laboratory for developing and conducting educational research.</p> <p>In taking a strategic approach to developing of educational research in ways that are coherent with and maximise the potential of our own nature and context, we have sought to prioritise and support educational research in a focused number of areas. These comprise:</p> <ul style="list-style-type: none"> • learning and teaching in digitally and geographically distributed contexts; • student transitions within tertiary education and into employment; • teacher education (for which the university has a regional responsibility); • educational policy and strategy including educational research focused on professional development, policy and practice in the context of institutions that, like our own, are geographically and digitally distributed. <p>Our focus in these areas is not to the exclusion of other forms of educational research, e.g. as relating to pedagogic practice in specific disciplinary contexts. Indeed, arguably a key strength of the university's educational research activity, and a key enabler for growing further research capacity, is the distributed nature of educational research across our Academic Partners, across the aforementioned educational research specialisms, and within various disciplines where educational research is being nurtured and embedded (including nursing and healthcare).</p> <p>1.2 Strategic development of educational research</p> <p>While this is the university's first education submission for the REF, there has been active engagement in educational research throughout our history. The university was set up to deliver economic, social and educational benefits to our region, but this unique environment and context was always recognised as being highly fertile ground for specific education based developments both in actual practice and associated applied research. A strategy and plan for the development of educational research was an integral and implicit element of the university's overarching strategic plan since before the start of the current REF period. This has led to a number of highly important strategic developments across the REF period, including the appointment of a Professor</p>

of Pedagogy in 2014 to lead the research engagement and capital investments to support and underpin this work (e.g. state-of-the-art Learning Lab as described Section 3, and extensive Virtual Learning Environment and Video Conferencing technology across the University).

This has served to establish our Learning and Teaching Academy, led by the Professor of Pedagogy, as the base for educational research activity (albeit noting that educational research is undertaken as a key activity in several of the university's physical campuses), and also as the hub for supporting education-based research activity of staff whose primary discipline is not education. The LTA coordinates an interlinked programme of educational research scholarships, professional development initiatives, and research mentoring (through the University Mentoring Scheme, led from the LTA), all of which are designed to support and increase engagement in educational research (and, for the mentoring scheme, support research across all disciplines).

The LTA also coordinates or co-leads a range of university-wide educational research projects that have specific application potential and relevance and impact not only in this university (e.g. the Research-Teaching Linkages project described later) but also in other UK institutions and other parts of the world (e.g. the educational policy, practice and research developments at the Royal University of Bhutan as described in one of our Impact Case Studies).

The university therefore set a deliberately ambitious target for its own research development across the current REF period in order to help influence educational research at a disciplinary level, and is already building on its successes in preparation for the period covered by the next REF.

The university's ambition has been underpinned by a strong and deliberate staffing strategy, outlined in detail in Section 2, and which has combined recruitment of new staff, translation from other discipline areas into education of existing researchers in the university, and development of new research talent from within the existing staff base.

Since the prioritising of educational research as a key area for research development post 2010, the number of colleagues engaged in dedicated or discipline-related educational research for which outputs have been produced has increased from a core of six individuals in 2010 to forty colleagues in 2020 (including colleagues engaged in nurse education research). Within this overall group, twelve were identified as producing educational research that would be eligible for the REF UoA23 submission, with many more colleagues engaged in other forms of scholarship or nascent research relating to education, or producing educational research related outputs for other UoAs.

The work undertaken to develop educational research during the period of assessment has seen a significant increase in relevant scholarship and research outputs recorded in the university's research repository. In the period covered by the 2014 REF, there were 30 published research outputs with a clear educational research focus in the repository. For the period covered by the current REF, a further 81 educational research outputs have been registered in the repository, bringing the current number of published outputs to 111. Published outputs to date span articles, journal papers, peer reviewed book chapters, two textbooks for students produced through a research project, and six monographs. Of the outputs produced in the period of eligibility for REF 2021, fifty-three outputs were considered for inclusion in the UoA23 submission.

1.3 Key achievements to date

The university's key strategic goals for educational research across the current REF period have been achieved, and surpassed in several cases. Beyond the significant increase in the number of staff engaged in educational research and in outputs being produced, these goals have included:

- Appointment of an academic and research lead for education (Smyth, 2014);
- Appointment of an academic and research lead for Teacher Education (Redford, 2014);
- Formation of educational research as a key activity and component with the University's Learning and Teaching Academy as the coordinating hub for educational research;
- Development of a Research Teaching Linkages (RTL) research project, to explore staff and student conceptualisations of research-based learning and teaching, and thereafter embed an identifiable university approach to research-based learning and teaching that will produce knowledge artefacts of direct value to university's wider communities;
- Development of a cogent network of specialist educational researchers in the aforementioned (1.2) areas of educational research;
- Establishing education research hubs in Academic Partners, interlinked through the LTA
- Engagement in collaborative education research developments internationally;
- Linking to community-based projects and initiatives, and thereby also linkage to the activities of public engagement with research, through a range of interdisciplinary research activities within which education research has been a core part.

Furthermore, since the earliest stages of its development, researchers in the education UoA have been both committed to, and promoted engagement with, the 'open access' agenda. This has been through identification and promotion of publication in relevant journals, and encouraging publication of monographs in open access outlets and formats. Close involvement with the Journal of Perspectives in Applied Academic Practice (Section 2) is another important example.

Some of the writings and activities of staff involved in the education submission have been directly invested in areas of research ethics, researcher development and research integrity. The principles of effective and appropriate engagement with research and associated methodologies have been part of the offerings made available to staff, and promoted to them, by and through the wider activities of the LTA. Section 2.2 elaborates.

1.4 Going forward and into REF2028

Building from the significant base now established, the intention for the next REF period is to:

- Develop and implement a university-wide strategy and framework for supporting the further strategic development of educational research and for increasing the number of colleagues directly engaged in educational research. This aligns with the university's commitment to the development of educational research contained in its Research, Impact and Knowledge Exchange Strategic Plan 2018-2022;
- Increase the number of academic staff who formally identify educational research as being a key area of research activity, and developing early career educational researchers within the education field and in their own academic disciplines;
- Building on existing activities in research Masters and Doctoral level student supervision, to introduce a specific education research degree and cohort of PhD and MRes students;

- Translate the RTL project and its findings into a formal university-wide approach, seeking also to harness the research findings to influence other HEIs (including internationally) in developing institutional wide approaches to research-led education that has direct benefits to their wider communities through engaging students as public scholars;
- Influence education policy in Scotland and further afield, including in the areas of institutional enhancement of education, digital education, and student transitions;
- Extending the university's international research influence into education-based associations with universities in the Republic of South Africa, e.g. the University of the Free State (UFS) and the University of Venda (UNIVEN), and institutions in other parts of the world that operate in similar geographical, economic and social contexts to UHI;
- In the area above, build on the model for engagement already successfully achieved in Bhutan (explored in the Impact Case Study: 'Ways of Knowing: Cross-cultural collaborative educational research in the development and implementation of pedagogic practice and policy at the Royal University of Bhutan as the national provider of higher education in a Least Developed Country');
- Further develop the university's growing international recognition for research in rural teacher education and professional learning (explored in the Impact Case Study: 'Influencing and impacting rural teacher education: researching and reconfiguring digital approaches, professional identify and agency in responding to a national need for teachers in rural and geographically dispersed communities').

Further future developments include establishing a new education hub at Lews Castle College UHI. CORE (Centre for Online Research and Education) will be focused around the education programmes for staff delivered online from LCC UHI (e.g. MEd) and research in digital education.

2. People

2.1 Staff and staffing strategy

As a rapidly developing area of research activity within the university, educational research requires, and has benefitted from, a range of staffing, staff development and support mechanisms, which have helped to build and embed a strong – and growing – staff base.

The introduction of the Professor of Pedagogy brought to life the coalescence of staff who were already active in educational research, and thereby form a core of education research staff under the 'hub and spokes' LTA structure, together with an associated grouping of wider university staff who are supported by the LTA, or through activities of the LTA, to undertake educational research. In some instances, educational research is being undertaken within the context of a specific discipline, most notably in teacher education (e.g. the work of Coker, at the university until 2019, and Redford, as explored in the aforementioned Impact Case Study), and also in music education (McLaughlin), environmental education research (Ruck), and business education (Camps).

The LTA, as the hub for educational research, comprises a core group of 8 active educational researchers who are included in the UoA, together with 4 associate members who have been undertaking specific aspects of educational research within their own pedagogic practice. The core team comprises Alexander, Coker, Fabien, O'Donnell, Rayner, Redford, Rennie and Smyth. Of these, several members have been directly involved in the development of educational research across the whole REF period, with one (Rennie) active since 2007.

In consort with the university's core mission (see Institutional Level Environment Statement, ILES) the education area's research has (in many cases) been linked to some form of practical and practice-based aspect, fostering research-based impact in a number of ways. This includes: through institution-level developments (as for our work in Bhutan); local developments of research capacity and support for our communities linked to the outputs of praxis-focused curricula (Rayner); or the application of research and resulting tools and models to help education practitioners undertake their own work more effectively, especially in relation to teacher education in rural contexts (Coker, Redford) and across dimensions of digital education including mobile learning (Fabien) and distributed and open education (Smyth).

Furthermore, as a tertiary institution that spans FE and HE and with a strong ethos of widening access, there is a corresponding strong focus in our educational research on the purpose and nature further education, and on student transitions from FE to HE (O'Donnell, Smith).

Concurrently, within the above contexts and in relation to specific research outputs, there has been an increasingly strong focus on critical educational research which has challenged key aspects of HE and educational practice (e.g. Alexander on social justice in careers education, Rayner on RTL, and Smyth on deconstructing curricula and conceptualising the digital university).

Within the LTA itself, in addition to the Professor of Pedagogy there are a number of personnel who play important roles in relation to supporting educational research, and our first education submission to REF. These include an Evidence-based Enhancement Lead, who oversees the LTA Scholarship discussed further on; a Professional Development and Recognition Lead, who co-ordinates the University Mentoring Scheme; an Organisational Learning and Development Lead who oversees staff funding for postgraduate study including PhDs; and a Digital and Open Education Lead who is supporting developments in open online scholarship and research.

The above is in addition to the institutional mechanisms in place to enable personal development and engagement in research, including sabbaticals, travel and conference funding, and formal research mentoring (offered through the aforementioned institution-wide University Mentoring Scheme, operated out of the LTA). The ILES provides further information in these areas.

While the Professor of Pedagogy has an overall responsibility for educational research, and the LTA provides a hub for related support, our educational research activities are taken forward through structured collaborative working between the Professor of Pedagogy, LTA, Professor of Teacher Education, and colleagues within the Academic Partners who have a local leading role for educational research (Rennie at Lews Castle College UHI and O'Donnell at Perth College UHI). While educational research activity is also supported across the university's four Research Clusters, it is a specific objective of the SILK (Society, Identity, Landscape and Knowledge) Research Cluster. Rennie and Smyth are members of the SILK Research Cluster Steering Group, while other key staff involved in educational research across the university are members of the cluster itself. Collectively these research related posts and structures help to pilot, evaluate, communicate and embed a range of initiatives to create a positive educational research culture.

The staffing and staff structures in place are also essential to further capacity building for educational research (including a post-REF2021 education research strategy) as per Section 1.

2.2 Staff development

While the SILK cluster offers initiatives that support research development and dissemination which are open to colleagues engaged in educational research, the majority of staff development opportunities in educational research are delivered or facilitated through the LTA.

Several strands of activity are relevant here. The first encompasses a significant annual professional development programme of workshops, events and symposia that the LTA has offered since 2016. Many events are focused on engaging in educational research, through sessions introducing key concepts and methodological approaches, or through staff and external guests sharing their own projects and findings. Significant events in recent years that have supported dissemination of educational research have included our first university wide Learning and Teaching Conference in 2017, and the second Learning and Teaching Conference in 2020 which was titled 'Dimensions of Tertiary Engagement'. As with the overall emphasis on the tertiary nature of the conference, the themes for the conference aligned with our own specialist areas of educational policy, practice and research (co-creating, digital, enhancement, equality and transitions) with research itself as the sixth sub-theme and for which the call articulated our aim of using the conference "...to provide a platform for colleagues undertaking educational research across the university to share their work". Several contributions to the 2020 conference were from colleagues who have submitted for UoA23, in addition to sessions focused on the support that is available for engaging in educational research at the university.

The LTA has also sought to provide opportunities for staff, including established and aspiring educational researchers, to engage with and learn from leading educational researchers and theorists. This has included an annual critical educational research event held in Inverness, and by videoconference across and beyond the university, since 2018.

Our inaugural critical educational research event saw Dr Antonia Darder present a public lecture on the topic '*The Social Justice Question: Decolonizing Pedagogy, Methodology and Leadership*' on 16th July 2018. June 2019 saw Dr Stephen Brookfield facilitate a participative workshop, based on his research, on the topic '*Becoming a Critical Educator*'. These and similar events have been pivotal to developing of a wider knowledge base of critically focused educational research, and in encouraging colleagues to conduct their own critically focused educational research. The LTA has also sought to engage staff with the growing research and evidence base related to open education. This included, in May 2017, the two day symposium 'The Porous University – a Critical Exploration of Openness, Space and Place in Higher Education' run by the LTA and the national Open Educational Practices Scotland (OEPS) project. The symposium featured, and provided a platform for the refining of, research and theoretical models subsequently published in the monograph by Johnston, B., MacNeill, S. and Smyth, K. (2019). *Conceptualising the Digital University: The intersection of policy, pedagogy and practice*. Switzerland: Palgrave MacMillan.

Beyond events of these kinds, the university provides a platform for engaging with, developing and sharing of educational research through the LTA Connect series of webinars. These run on a monthly basis, with many featuring internal and external speakers providing insights into their own educational research, methodological approaches, and findings.

Since 2014 the LTA has operated the LTA Scholarship fund. This offers small grants (up to 10K) to individuals or small teams to undertake educational research projects that are directly relevant to current or emerging pedagogical concepts, needs or developments within the sector or the university. To date the LTA Scholarship fund has supported twenty-three projects. In 2018/19 the LTA Scholarship fund was revised, and introduced the requirement for every project to produce at least one paper ready to submit to a relevant peer-reviewed journal relating to education or

education in the specific discipline, and to deliver internal dissemination activities. Up until 2018 the LTA Scholarship fund only encouraged the submission of a paper to a relevant journal. The LTA Scholarship has now produced eight peer-reviewed publications, most coming since the redesign in 2018/19. Publications produced through LTA Scholarship projects, and feature in the UoA23 submission, include outputs from Coker, Fabian and O'Donnell.

At the time of writing, there are six active or recently concluded LTA Scholarship projects across the university and for which a minimum of one peer-reviewed publication will be produced. These include educational research outputs from colleagues who belong to other research disciplines and Units of Assessment, which we see as critical to the wider development of educational research across the university and to realising an approach to educational research that is situated within the disciplines, curricula and practices of the university.

This also underlines a commitment to the development of educational research that extends beyond REF2021 and those who are formally included in the UoA, and which has an impact and relevance for disseminating effective pedagogical practice. A recent example of this is an LTA Scholarship project led within Argyll College UHI on the topic of 'The use of screen capture software to deliver individual formative feedback' which was highly commended at the College Development Network Awards 2019 <https://www.cdn.ac.uk/college-awards-2019/>.

The support the LTA provides for producing peer reviewed educational research outputs has also been complemented since 2018 by a series of residential Write-UP (Writing for Publication in University Practice) workshops offered each academic year. These are open to any colleagues who would like to apply to attend, and who have something relevant to work on by way of either a scholarly or research output in education. The option to work on a scholarly output is intended to support those who are seeking to have an initial engagement in education as a disciplinary area of theory and research, and who may transition to formal educational research. There are several educational research publications in progress as a result of the Write-UP residential workshops, with 2020/21 seeing the first three publications come to fruition.

Since 2017 the LTA has also co-ordinated the aforementioned University Mentoring Scheme, at which point the scheme was extended to offer three distinct strands of mentoring activity in the areas of: Research; Learning and Teaching Enhancement; and Professional Recognition. In 2020, Scholarship Development was added as a fourth strand of mentoring activity. Through the Research mentoring strand of the scheme, an increasing number of colleagues are being supported to engage in educational research alongside the scheme's established role in supporting research across other discipline areas and other REF Units of Assessment. Colleagues who are beginning to engage in educational scholarship can seek mentoring support through the Scholarship Development strand of the scheme, before transitioning to the Research mentoring strand as they move into formal educational research activity. In many cases, educational research undertaken as part of LTA Scholarship projects is directly supported through the research mentoring strand of the scheme. Colleagues successful in their LTA Scholarship bid, but new to educational research, are required to sign up for research mentoring support.

There are staff development pathways through the various activities outlined above, and the increase in the number of colleagues engaged in educational research (Section 1.2) has seen individuals progress from attendance at educational research seminars through to LTA Scholarships/writing retreats/mentoring, and on to producing peer reviewed research outputs.

2.3 Postgraduate research development

Staff who comprise the UoA submission have been directly involved in the supervision of increasing numbers of PhD and Research Masters students across the current REF period. Due to the nature of the development of educational research, most of our research students have been linked to other discipline areas, but with an education-related aspect to their research studies. Staff have been principal supervisors of 10 students across the period and second supervisors on 6 more across the same period. These engagements are beginning to show through as graduations in the statistics, and it is the university's intention to grow these numbers markedly in the next REF period, and also to extend the doctoral level study options to include an EdD. Rennie and Smyth are leading the work required to establish education as a named area for postgraduate research. This is currently underway for implementation in 2021/22. Rennie and Smyth are also amongst the staff at the university who supervise education-related PhDs within other disciplinary contexts (including computing, nursing and allied health sciences) and are co-supervising with colleagues to build capacity for doctoral supervision when education is established as a distinct area of postgraduate research. The intention is to enhance the existing research degree student experience by building not only a cohort of educational research students but extending this to include all students within whose research has an education element.

A specific dimension to postgraduate research development in education at the university has been the increasing number of staff who are currently engaged in education-related doctoral studies (including PhDs, EdD's) within the university and at other institutions. Many of these engagements are part-funded through the university's 'Staff Development 1 Fund' that is co-ordinated by the aforementioned Organisational Learning and Development Lead in the LTA. Within the 13 PhDs and other postgraduate research awards that have been supported by the LTA and undertaken by university staff since 2015, a total of 6 have been EdDs or PhDs in education with 4 completions to date.

2.4 Equality and Diversity

As outlined within the ILES, the university is committed to equality of opportunity with respect to participation in research and research development. This commitment to equality and diversity is also central to the development of and participation in educational research. We are particularly mindful of the challenges many colleagues face in coming to educational research for the first time, sometimes from a position of having engaged in discipline related research or sometimes in seeking to frame their own research development in the context of learning to become an educational researcher. We are also conscious of the challenges of time and resourcing that academics who are teachers and practitioners can face when seeking to engage in educational research around dimensions of their own educational practice.

We seek to address the above through several of the aforementioned staff development approaches and interventions, including seminars and webinars to introduce key concepts and considerations for those seeking to develop their educational research, formal research mentoring arrangements, and LTA Scholarship funding that can be utilised for purposes including remission from teaching or for recruiting research assistants for educational research projects. With the exception of the Write-UP writing residencies, all other educational research events are offered as online networked events (or offered in dual face-to-face and online mode) to ensure that colleagues can participate regardless of their location within the university.

Furthermore, the University Mentoring Scheme is underpinned by a Mentoring Code of Practice which articulates the importance of mentoring to directly address inequality of opportunity due to

gender, career stage, returning from maternity leave, or access to funding to participate in career development opportunities. On this latter point, all of the LTA's professional events and provision, including mentoring, are available for staff to participate in at no cost to their own department or Academic Partner. This includes cover for accommodation costs for attendance at residential events (i.e. the Write-UP retreats or our Learning and Teaching Conferences).

The university was awarded Institutional Athena SWAN Bronze Award in May 2017. Staff from the LTA contributed directly to that work and are contributing to work being undertaken for the Silver Award. Furthermore, the wider work undertaken by the LTA in tandem with supporting engagement in educational research includes coordinating the university's Women's Network (established 2018), offering seminars and events that explore equalities from an educational research perspective, and coordinating participation in Advance HE's Aurora leadership programme for colleagues who identify as women and who are seeking to be supported in developing their own academic and research leadership capacity and experience.

Grade/position	Female	Male
Dean	0	1
Professor	1	3 (includes the Dean in above line)
Reader	0	1
Senior Lecturer	1	0
Lecturer	3	3
Total	5	7

Role and gender profile of staff submitted to UoA 23

Within the UoA the gender split is a fairly even one although with less balance in relation to senior roles. In developing educational research going forward, a key component of the educational research strategy to guide us post REF2021 and up to REF2028 (as covered in Section 1.4) will be an equality and diversity impact assessment and associated action plan.

3. Income, infrastructure and facilities

3.1 Income

In terms of income generation, educational research at the university to date has tended to be focused around relatively small-scale projects, but ones where clear future benefit and impact can be achieved in short timeframes. This is part of a deliberate strategy of capacity building for educational research and the associated activities described thus far, and that has been our main focus from 2015. However, increasing our income generation for and through educational research is a key objective in our forward trajectory for the development of educational research, and we have already been successful in securing funding for a number of significant projects and facilities.

External research income generated for specific projects includes the £300K awarded to the university for the Jisc funded e-TIPS (e-Textbook Institutional Publishing Service) research project that undertaken in partnership between Lews Castle College UHI, UHI Executive Office and

Edinburgh Napier University between 2015-18. The e-TIPS project was one of four projects funded as part of Jisc's national 'Institution as e-Textbook Publisher' programme, exploring the potential and capacity for universities to be publishers of open and low-cost e-textbooks for students. The e-TIPS project was led by Rennie as Principal Investigator with Smyth as Co-Investigator. The aims and collaborative nature of the project are detailed further in Section 4.

In 2018/19, Rosie Alexander secured £5K in external funding from HECSU (Higher Education Careers Services Unit) for a research project looking at rural students' experience of higher education careers provision, undertaken through Inverness College UHI.

Colleagues within the unit of assessment have also received funding for a number of Global Challenges Research Fund (GCRF) projects. This has included the CHORTENS (Creating Helpful Open Research Tools for Engaging New Staff) project with the Royal University of Bhutan. This received funding of £40K for the first year of activity in 2018/19 and further funding of £37K for the second year of funding in 2019/20, and is explored in more detail as part of one of our Impact Case Studies. In addition, Smyth was a Co-Investigator on the GCRF funded 'Culture and heritage, language, education and creativity: UHI Cultural Resilience Project in Senegal' which received initial funding of £9.5K in 2019. A follow-up project 'Project Senegal: African Digital Academy' was undertaken in 2020, supported by £37K of GCRF funding, and with Smyth as Principal Investigator. Fabian also secured GCRF funding of £8.1K to investigate the use of OER (Open Educational Resource) in mathematics education in the Philippines during 2020.

In addition to receiving the external funding outlined above, during the period of assessment for REF 2021 the university, through the aforementioned LTA Scholarship fund, has distributed £140K of funding internally to enable small-scale educational research project as described in Section 2.

Regarding investment in infrastructure and facilities, in addition to creating and appointing the role of Chair of Education (Pedagogy) in 2014, to provide leadership in relation to the Learning and Teaching Academy and educational research, the university and Highlands and Islands Enterprise also secured European Regional Development Funding to construct the Inverness Campus which includes the An Lòchran Research and Enterprise Centre. An Lòchran includes the Learning Lab and associated spaces to support educational research and development projects.

Latterly, in 2019 Rayner led the University's engagement in a bid that secured ZAR5M (£236k) from the British Council and the RSA Government, to support co-supervision of 10 academic staff members in 2 South African Universities according to a novel model of doctoral degree delivery, as part of a collaborative international research project in its own right. We intend for this development to be the focus of an associated educational research project.

3.2 Infrastructure

The infrastructure for supporting the development of and engagement in educational research is a distributed one within the university, with the Professor of Pedagogy having an overall leadership responsibility and the LTA providing a hub for supporting staff to engage in educational research and educational research development activity. This includes through the range of aforementioned support activities and processes (professional development events, LTA Scholarship projects, University Mentoring Scheme, and Staff Development 1 Fund for relevant PhD studies).

As highlighted previously, in addition to the Professor of Pedagogy the LTA has a dedicated specialist team of staff who lead on and co-ordinate the aforementioned activities that directly

underpin or provide additional support for engagement in, and dissemination of, educational research, and also in supporting the transition from educational scholarship to formal, peer-reviewed educational research. The wider LTA team, excluding the Professor of Pedagogy, comprises 4.6 FTE staff in addition to a part-time Senior Lecturer (Research) (Alexander) who is attached to the LTA working on an emergent area of educational research that is pertinent to the university and our region (careers education and social justice in rural contexts).

In addition to the LTA and SILK Research Cluster, the infrastructure for educational research also includes several colleagues who have responsibilities for leading and developing educational and other research activities within the contexts of their own roles and/or Academic Partners. This includes Rennie at Lews Castle College UHI and O'Donnell at Perth College UHI, who represent a number of colleagues who are active in educational research across these particular Academic Partners, and Professor Redford, Professor of Teacher Education, who is supporting colleagues to engage in research related to the development and impact of teacher education activities and curricula (as explored in the second of our two Impact Case Studies). The aforementioned colleagues and the Professor of Pedagogy work in close collaboration in the development of educational research both in respect to REF2021 but also more generally in relation to developing an even greater capacity for educational research going forward. In addition, the Vice Principal Research and Impact and the Dean of Research are key colleagues within the Executive Office who are working with the Professor of Pedagogy and UoA staff to support educational research.

3.3 Facilities

The aforementioned Learning Lab at An Lòchran is an adaptable space designed to support a range of pedagogic research and development activities. It has directly supported and enabled research undertaken by the core team in the UoA, and has supported a range of the professional development initiatives in educational research, including the Write-UP retreats, as covered in Section 2. Colleagues from across the university also use the facility to undertake their educational and discipline-related research and knowledge exchange activities. In terms of supporting educational research, the Lab is equipped with a range of educational tools and technologies and can be configured to simulate or support learning and teaching in classroom, blended and online contexts, and to support research in current and emerging areas of educational practice including:

- interactive classroom approaches;
- distributed networked learning;
- immersion in simulated virtual environments.

The Lab is also equipped to support observational research and evaluation activities both on site and remotely, and to provide a space for professional development activities and events (including teaching observations, practical workshops, and the prototyping and testing of pedagogic interventions, methods and educational resources by staff and students). The Media Suite attached to the Learning Lab provides 'control room' functionality for high quality audio and video recording of activities taking place within the Lab, including qualitative and observational research.



The Learning Lab at An Lòchran Research and Enterprise Centre



The Media Suite with observation and recording facilities for the Learning Lab

The European funding secured for developing the Learning Lab also procured a range of equipment to facilitate research into various dimensions of digital education practice, and to support research off site. The range of equipment which staff can book for use on and off site includes laptops and tablets, audio and video recording equipment, virtual reality headsets, 3D printers, interactive smart screens, and accessible screen readers.

Located next to the Learning Lab is a Media Suite, which is the space from which the Learning Lab can be used for recorded observation and for broadcasting events, and which also supports education technology developments. The An Lòchran research and enterprise centre also houses

the Professor of Pedagogy alongside the majority of the staff that comprise the Learning and Teaching Academy and the university's Educational Development Unit.

The Learning Lab is complemented by two similarly constructed lab spaces for educational research, one at Lews Castle College UHI and a new lab at Perth College UHI. We are exploring the networking of these spaces as a means to enable further research into networked, multi-location collaborative learning and teaching. Further facilities support for educational research is provided through extensive subscriptions to a full range of educational research journals, and the provision of specialist software for data collection and analysis.

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

4.1 Collaborations

Collaborative research activity has been central to the development of educational research at the university, and a multiplier in terms of supporting increased capacity for educational research and supporting early career educational researchers, and in relation to staff collaborating with colleagues at other universities to combine research strengths and interests.

Key collaborative educational research initiatives within the university, and which are having benefits internally and beyond the university itself, include the Research-Teaching Linkages project described Section 2. This is exploring staff and student conceptions of, and approaches to, RTL across various disciplines, and is disseminating academic outputs and curriculum enhancement case studies and resources to the wider sector.

Collaboration with other universities and organisations has also been key to our educational research to date. Nationally, research outputs have been produced in conjunction with colleagues at the University of Glasgow in the area of Scottish Education policy and practice, the University of Dundee in relation to student transitions and employability, and Oxford Brookes University and Vitae in respect of researcher development. In addition, collaboration with colleagues at Glasgow Caledonian University and University of Strathclyde produced the aforementioned monograph on the concept of the digital university that proposes a number of new models and frameworks.

In the area of teacher education, Professor Redford is part of MQulTE - a longitudinal project across eleven universities providing teacher education qualifications in Scotland. Professor Redford also leads the Scottish Council of Deans of Education 'Closing the Attainment Gap' project in collaboration with seven other Scottish universities. The project is first major collaborative education research project funded by the Scottish Government since 2009

The aforementioned e-TIPS project saw Rennie, Smyth and colleagues working in partnership with Edinburgh Napier University for a large scale project funded by Jisc as part of their Institution and eTextbook Publisher Programme. As with the other projects in the programme, eTIPS involved researching, developing, implementing and evaluating the process and impact of an institutional approach to publishing e-Textbooks. The books to be produced (in our case, two cross-disciplinary texts to guide students in undertaking UG and PG research projects) were secondary to the research and development process, with eTIPS tasked to implement and evaluate a low-cost/wide distribution e-Textbook model that utilised open educational resources to support the books themselves. The research and development work undertaken through eTIPS directly and significantly influenced the content of Jisc's Institution as e-textbook Publisher Toolkit

which was released in December 2018, and processes developed for eTIPS have since seen the university collaborate with postgraduate students on the publication of Masters research..

Internationally, our ongoing collaborative research with the Royal University of Bhutan has had a significant influence on the development of RUB and their own internal educational research culture. The first project in 2017, Sub-Alpine, saw Rennie and colleagues investigate the creation of an appropriate Learning and Teaching Strategy and opportunities for professional accreditation, and tested the efficacy of a continuing professional development framework. The subsequent project, CHORTENS, has been running from 2019 and is due to complete 2021. CHORTENS has built on previous engagements with RUB through undertaking a phenomenographic programme of educational research focused on: (a) establishing a baseline study of the conceptual and practical engagement of staff at RUB with pedagogical research in their own practices; (b) intervening with appropriate capacity-building support structures; (c) and analysing RUB staff experiences and impact on institutional development, practice and policy.

Smyth, in partnership with colleagues from Creative Industries and UHI Language Sciences Institute, collaborated with a number of universities in Senegal across 2019 and 2020. A key focus of the related projects, 'Culture and heritage, language, education and creativity: UHI Cultural Resilience Project in Senegal' and 'Project Senegal: African Digital Academy', was to research cross-cultural educational experiences in the arts, supported by digital education practice and a linking of the activities of the curriculum to social issues and needs in Senegal.

Alexander has also forged successful collaborations with colleagues in her field of research from the University of the Faroes and the University of Greenland, resulting in joint publications on careers guidance education, policy and practice in self-governing regions.

4.2 Networks and partnerships

Internally, educational research is supported directly through the 'hub and spokes' structure of the LTA which supports the network of researchers that comprise the UoA. Furthermore, our LTA Scholarship projects directly enable both individuals as well as teams of colleagues within and across the university's Academic Partners to undertake funded educational research that directly benefits our own educational practices as well as our educational research profile. The LTA Scholarship project 'An investigation into blended learning at the university: uses and effectiveness', which was undertaken by a small team from across three of our Academic Partners, is a good example of a funded internal research project that addressed and provided research evidence for the enhancement of practice internally, as well as producing research that was published and contributed to the wider literature around blended learning and teaching.

A further example, undertaken across 2018, involved an LTA Scholarship project that took a mixed methods approach to investigating student and staff perceptions of digitally enhanced learning and teaching at the university which informed selection of, and investment in, a new Virtual Learning Environment for the university which was implemented in 2019.

Research and development in digital education is a significant workstream in terms of networks and partnerships. Externally, beyond the examples already in 4.1, Smyth was one of the co-chairs for the annual conference of the Association for Learning Technology (ALT), the largest educational technology research and practice conference held in the UK. The 2019 ALT Conference took place at University of Edinburgh, and Smyth was announced as the new Vice Chair of ALT at the event.

In terms of peer reviewed journals, and research related committees, colleagues within the UoA are active on several fronts. This includes working in partnership with the University of Glasgow, University of Dundee, University of Sussex and Heriot Watt University to run the open access Journal of Perspectives in Applied Academic Practice, and collaborating with University of Stirling and Dundee and Angus College to establish the new journal College Action Inquiry Research Network (CAIRN) which is dedicated to educational research in Further Education.

Further responsibilities include the membership of Redford on the Council of the British Educational Research Association and editorial board of the Scottish Educational Research Journal. Redford and Smyth are also members of the Research Strategy for Scottish Education Academic Reference Group, working with the Scottish Government to devise and implement a national plan for educational research across the entire Scottish education sector.

Colleagues in the UoA also review for the following education journals:

- British Journal of Educational Technology;
- Computers and Education;
- Educational Technology Research and Development;
- Environmental Education Research;
- IEEE Transactions on Education;
- International Journal of STEM Education;
- Journal of Computers in Education;
- Journal of Education for Teaching;
- Journal of Perspectives in Applied Academic Practice;
- Research in Learning Technology;
- Review of Education.

Our involvement with the Journal of Perspectives in Applied Academic Practice has been an especially impactful one. This has seen Rennie guest edit a special issue on Learning and Teaching in the Distributed University in 2015, and for which a number of university colleagues were supported to submit research papers and other articles. The outcome of this was that nine of the fourteen publications featured in the special issue came from colleagues at UHI. In addition, Smyth and colleagues worked with the Quality Assurance Agency Scotland to guest edit a special issue of JPAAP carrying research publications produced through the QAA Scotland national Enhancement Theme 2015-2017. The Student Transitions special issue was published in 2017, and launched at the QAA International Enhancement Conference 2017.

In wider work to support engagement with educational research amongst new researchers, Smyth worked with Professor Yvonne Bain (then University of Aberdeen) to produce a 2016 special issue on Early Career Research for Scotland's oldest educational journal (Education in the North). As previously explored, the university has partnered with groups including the Open Educational Practices Scotland (OEPS) project, and with international scholars to offer joint events relating to key and emerging aspects of the educational research agenda.

4.3 Wider activities and engagements

A number of senior colleagues in the UoA are engaged in wider activities and positions not mentioned thus far, and related to their area of educational research expertise or interest.

Rayner was founding chair of the Scottish REF Managers Group, former chair of Universities Scotland's Research Development and Training Committee, and a longstanding member of Universities Scotland's Research and Knowledge Exchange Committee. His wider professional activities intersect with his interests in researcher development and the RTL nexus.

Redford served as chair of the Scottish Council of Deans of Education (2016 – 2018), on the Strategic Board for Education (2016 – 2018), the Council for Education (2017-18), and the National Teacher Workforce Planning Group (from 2015). Redford is recognised for hosting ISFIRE an International Symposium for Innovation in Rural Education at Perth College UHI in August 2021.

Rennie is currently External Examiner for the Masters in Open and Distance Education at the Institute of Educational Technology, Open University, and is former Visiting Professor at Kings College London, working with the School of Dentistry to develop online educational resources.

Smyth is Visiting Professor in Learning and Teaching at Edge Hill University, is Vice-Chair of the Association for Learning Technology, and is External Expert for digitally enabled education on the NHS Education Scotland Technology-Enhanced Learning Governance Group, to oversee the implementation of a national NHS Education Scotland TEL Strategy.

4.4 Beneficiaries

The university's engagement with formal education research is relatively young, but its influence and significance has been growing rapidly across the REF period and is already very well established in the sector. The mixture of research practice and theory is a perfect complement to the university's overall mission, and our research in action across our own educational delivery, and its reaching out across UK HE and internationally, indicates our growing contribution to the field and provides a solid base for even more contributions in the next REF period. Beneficiaries include education practitioners in schools, colleges and universities, politicians/policy-makers and their researchers, school pupils across all grades, undergraduates and lifelong learners; and fellow researchers in the field of Higher education in Scotland, the UK, and internationally.

4.5 COVID-19

The educational research expertise within the UoA has been drawn upon internally and externally in response to COVID-19. The LTA as the hub for educational research proved to be an important reactive and proactive player for the institution, drawing upon research and evidence-based practices to support staff to augment existing digital practices through interventions including peer mentoring, and the development of research informed guidance.

Smyth oversaw these activities, and also engaged in a number of sector wide events and initiatives around the challenges of teaching within and through the pandemic. This included being invited to chair the closing plenary of the Association of Learning Technology's global online conference in 2020, and which featured a number of leading experts exploring the implications of the pandemic for education. Smyth also contributed as invited speaker or facilitator to a number of professional body COVID-19 events offered across sector, for organisations including Jisc, the Staff and Educational Development Association, College Development Network, and NHS.

Rennie has also been active, helping to frame responses to COVID-19 through the design and delivery of digital health research initiatives with the Western Isles NHS.

Finally, Fabian has been advancing a project looking at Filipino teachers' use of TPACK (Technological Pedagogical Content Knowledge) framework for the design of digitally enabled education within the context of the pandemic (with an initial output submitted in January 2021).