Institution: Nottingham Trent University

Unit of Assessment: C25 Education

A.   Context. Recognising the centrality of Education to all aspects of society, the Unit has focused on research that exhibits substantial impact on practice and outcomes for a wide range of end users with an emphasis on collaborative projects. The principal beneficiaries are practitioners, professional services and learners. Impact from research has been generated for a range of groups including National College for Teaching and Leadership, the EU, The British Academy, local schools and colleges, BECTA, International university partners and the Ministry of Defence.

The Unit's impact on education outreach across the STEM agenda, (**Brown, Ireson** and **Romney**) reflects on the breadth of beneficiaries and on the impact across the age ranges. The work of **Moss** demonstrates the impact of the internationally disseminated Kit-in-a-Kase model and associated teacher CPD activities. Over 11,500 pupils benefited from this approach in UK. The Regional Development Agency funded six bespoke kits for Nottingham Science City (£93K) to further embed the outcomes. Post-performance evaluation of the Cosmos project showed real impact on children's perceptions of space. Parallel literacy work was reported by the school as having "a huge impact on the writing attainment of children".

Boulton's TDA funded work on digital literacy to develop language literacy has informed national practice for teacher training and CPD, and specifically work in the case study schools in the Midlands of England. Allied to this is the impact of the Language Ambassadors work by Hughes, using digital technology in language learning. Nottingham Trent University is the Computers At School (CAS) hub for the East Midlands bringing the research directly to practicing teachers who will be ensuring the impact is delivered to their pupils. This group also informed the new curriculum for computer studies in primary and secondary schools.

The work of the Unit has impacted on vulnerable, disaffected and disadvantaged learners and the approach of professionals to engaging and supporting such learners. **Richards** work informs practice with learners with specific needs and **Wallace** has influenced approaches to learners lacking in motivation, especially in the post 16 sector. The work of **Peart** has had a direct impact on disaffected and underrepresented groups through her Black on Track project. **Emerson** has influenced practice for students in need of language development

b. Approach to impact

Education research at NTU aims to generate positive impact on policy, practice and learner achievement. This is implemented through internal and external networks. Partnership and collaborative research is achieved through research projects with partnership schools, colleges and agencies and other collaborations on a pan-European scale. Practitioner staff are supported by the Unit in becoming active researchers through the mentoring and buddying system which develops research, dissemination and networking skills, knowledge and experience. Experienced researchers are also recruited to NTU to support strategic areas and contribute to research and research supervision capacity and skills. Staff within the Unit negotiate their plans for research activity each academic year, which include specific identification of both the dissemination and impact of the proposed research. The Unit has the support of NTU in terms of support for sabbaticals, research leave, equipment and resource procurement as well as funding for travel and other networking costs.

Looking beyond the impact case studies presented in this submission, evidence of the Unit approach to research with impact is reflected in the four Education research themes that span the institution:

Inclusion, diversity and engagement: This work impacts on the training and professional development of teachers and the inclusion of pupils vulnerable to underachievement, including those with special educational needs (SEN) or from disadvantaged areas. It has developed specialised skills in new teachers for teaching diverse learners (a UK government priority) and informed reforms in the initial teacher-training curriculum. Research with experienced teachers

has informed inclusive education guidance provided to international education agencies, LEAs, and schools; and to FE colleges nationally, thereby impacting on the learning of children and young people.

Language and communication this group contributes to the shaping of government priorities relating to literacy, reading and writing and the development of literacy skills, including academic literacy and links to digital literacy. It impacts on the experience of HE learners and international learners as well as school pupils.

E-learning, The impact of this work is in two key areas: expanding digital literacy skills in staff and students linked to using technology to enhance learning opportunities and using new technologies to raise literacy levels and engage disaffected school pupils. Learners and practitioners across all Education sectors are reporting increased confidence in using new technologies; pupils are reporting greater engagement, understanding and ability to access the curriculum.

Pedagogy, The impact of this work is its influence on the engagement with, and attainment of learners across phases and subjects. It uses a broad portfolio of innovative approaches, including visual, kinaesthetic and empathetic learning models to promote subject learning alongside cultural enrichment and developing employment skills. The work has had a significant impact on practice including aspects which have been embedded both locally and internationally. Its interdisciplinary nature offers new sustainable models in education. New research, for example the SECURE project which involves eleven European countries in a study of pupil and teacher attitudes to Science, Technology and Mathematics education, aims to influence best practice in terms of engagement at both the practitioner and policy maker level, and ultimately learner engagement and achievement.

The Unit is supported by the Education Research Advisory Group which includes representation from across the University. The advisory group meets regularly to discuss current research and the scope to bid for new research both as a single institution and part of a consortium. All new research looks outwards with measurable impact being a key criteria. This can be exemplified via the School of Education's small scale research projects which link school based and University based researchers to investigate an issue of direct relevance to the school or college partner, for example the use of story sacks in primary schools to raise reading levels.

c. Strategy and plans

Research in Education at NTU is practice based and collaborative and aims to impact directly on outcomes for learners. This aim will continue to underpin the research strategy for the Unit. The strategic plan for the next five years will build on our current strengths, innovative practice and collaborations and to develop further partnerships which will extend the reach and impact of our research. We will achieve our research aims through

1. Supporting staff in developing research with impact through appropriate research design, planning and resourcing, including engaging end users and partners in the research specification, design and realisation.

2. Continuing to develop roles and structures to support staff in developing and delivering research projects, e.g. the newly appointed Research and Professional Development coordinator post in the School of Education, the Partnership Manager for Research and Professional Development and the Head of Partnership, and continuing development of the research supervision team capacity within NTU and collaborative partners.

3. Working with the NTU Research Grant Capture Team as a valuable asset within the Unit, notably to facilitate relationships with partners, funders and companies in order to attract funding through partnership. An example of such a venture beyond REF 2014 is the development of primary school teaching materials, funded by the European Space Agency, using satellite construction as the medium (**Ireson et al**). An initial pilot project, £10k, is being funded to enable materials for primary school to be developed and trailed prior to National and European scale roll out.

The Unit aims to promote a research culture that recognises the value and importance of impact. It will continue to access University-based initiatives and further enhance its own to deliver impact, particularly where these have been successful. The Annual Education Research Conference and the NTU Learning and teaching conference both have a high ratio of representation from members

of this Unit which allows best practice and successful outcomes to be disseminated. It will also work with Heads of Departments to support impact based research plans and strategies for the delivery and measurement of impact will be included in the Personal Development Review process for all research active staff.

As a University-wide strategic development, an adaptation of the Vitae Researcher Development Framework is being implemented as a vehicle for driving the development of colleagues, from novice to expert researchers. This strategy not only provides development for researchers but also facilitates impact by ensuring it is built into the planning of all research proposals. The strategy is founded on;

1. *Embedding impact as part of our research culture*: Impact assessment is now a key part of the research within the Unit and review processes support staff in maximising the impact of their research including access to both internal and external funding streams. This is managed through the NTU Research Grant Capture Team, research co-ordinator and research group leaders.

2. *Collaborative research and impact*: The research outputs and case studies presented by the Unit demonstrate collaborative links with national and International partners from European and Australian HEIs to community theatre groups and the wider community. Networking is seen as an important first step in collaborative projects and the Unit, whilst building on existing partnerships, is actively seeking funds to support international networks to develop research interests pertinent to the expertise within the group (e.g. **Richards et al** in the inclusion case study).

3. *Impacting on the local community*: The Unit will continue to develop its strong links with the local community through outreach and research. Members of the group have benefited from internal investment to develop research in partnership with local schools and colleges. This has resulted in work as far ranging as primary science achievement to the underachievement of black males in FE, see for example the work of **Serret** and **Peart**.

4. *Potential users and beneficiaries involved in the research process*: The Unit accentuates the involvement of potential end users and beneficiaries of our research. The three case studies presented in the submission demonstrate links with schools, colleges and community groups in this context.

d. Relationship to case studies

The three case studies presented in this submission demonstrate the ways in which impact – on creativity, culture, society, policy, practitioners and professional services - is an essential element driving our current, recent and future research. An overarching theme of social justice and social and economic inclusion is clearly evident throughout. Developing professional practice for working with learners who have special educational needs is increasingly having impact on the practice of working, in a variety of professional services, with children and young adults who have learning difficulties (case study 1). The measurable impact is not only on professional practice but also, and perhaps more importantly, on the learning opportunities offered and learning outcomes. These themes of inclusive practice and the professional development of practitioners are also shared by the Innovations in STEM Education case study, impacting as it does on the engagement, practice and outcomes of learners across the age, ability and disciplines contributing to the wider society using creativity to change the culture of engagement. The third case study, promotes Social Inclusion through digital literacy and technology, following a similar trend in practice based research however the inclusive approach is focused on access to technology enhanced learning and skills development.

Each of the three case studies have benefited from the direct involvement of end users of the research, internal funding for partnership research and external funding to develop international networks. In addition internal and external funding, including the increased number of PhD studentships, has led the development of colleagues associated with the case studies.