

Impact template (REF3a)

Institution: University of Dundee
Unit of assessment: 25 Education
<p>a. Context.</p> <p>The work of the Education unit of assessment is driven by a belief that educational research will impact upon policy and practice through the development of reflective practitioners in several professional fields. In organisational terms, the work is set within CRITAL, the cross-University Centre for Research and Innovation in Teaching and Learning. CRITAL itself has several networks under its umbrella (see Environment Template) and interactions at various levels encourage the sharing of ideas and productive collaborations between education scholars, researchers and the consumers of educational research. The current submission comprises two principal components: learning and teaching in the primary school years, and in higher education (predominantly in the areas of medicine and education). The main non-academic user groups include policy makers, managers, teachers and learners in these fields. Some recent examples follow.</p> <p>Several empirical studies have focused on primary school pedagogy, both cognitive and affective factors: for example, peer tutoring and self-esteem (Miller, Topping et al., 2010); implementation integrity in maths tutoring (Topping, Miller, et al., 2011) and game-based learning (GBL) and self-perceptions (Miller & Robertson, 2010). Evidence in relation to impact on practice in these areas is provided in the two Ref. 3b case studies associated with this submission. There have been critical theoretical reviews of wider educational concerns, aimed at policy impact: for example, related to resilience (Jindal-Snape & Miller, 2008), creativity (Jindal-Snape, et al., 2012), parenting and education (Muschamp et al., 2009) and child-abuse prevention (Topping & Barron, 2009). Other examples include studies related to learning in higher education (Jindal-Snape, Topping et al., 2008), which have influenced university policy on overseas students. Several empirical studies have related to professional and professionalism learning of medical students within the context of the medical workplace learning environment (Ajjawi et al., 2008; Rees et al., 2011; Rees et al. 2013) and to the assessment of non-cognitive capabilities of medics across their education continuum, from selection and admissions through to post certificate of completion i.e. roughly equivalent to consultant level (Murphy et al., 2012; Dowell et al., 2012; Dowell et al., 2013). These have influenced both UK-wide and Scottish Government policies in this area.</p> <p>b. Approach to impact.</p> <p>The UoA has traditionally had close working relationships with its end users. Two examples are provided by way of illustration. In primary education, we work closely with several local councils. Links are both formal (e.g. partnership agreements) and informal: the personal and professional relationships built up with teachers and head-teachers over many years. These partnerships facilitate the sharing of ideas at different systemic levels, and offer regular opportunities to emphasise the relevance of our research work to their priorities. They also allow us to gather feedback about how our research is being used, alerting us to further opportunities which may exist. Our students, both pre-service and in-service, are also integral to processes of dissemination and impact, acting as conduits for our research findings, as follows. Within the University, our research work informs students' professional preparation; they learn about the research findings in parallel with the pedagogical skills involved in the interventions. Subsequently, on placement, impact is assured since pupils in classrooms benefit directly from the lessons the students teach. In addition, the students are further encouraging impact and sustainability by modelling research-informed practice for teachers. For example: pre-service students were taught about our research into game-based learning (e.g. Miller & Robertson, 2009) and many subsequently used the techniques on placement. As is evidenced in one of the impact case studies, over this period (2008-2013) there has been a considerable increase in the use of game consoles and GBL. Thereafter, students effectively become part of a feedback loop when they report on the practice they see in different schools, so providing useful information about impact and opportunities for future development.</p> <p>In medical education, we work closely with NHS Education for Scotland (NES). By winning a competitive tender for £450,000 in September 2011, we have set up a consortium between the University of Dundee and NES, involving all Scottish medical schools: the Scottish Medical</p>

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Education Research Consortium (SMERC: <https://www.smerc.org.uk/>). We now work collaboratively with this user organisation to develop a programme of education research within postgraduate medical education. This has involved developing relationships with NES, developing a governance framework with a Project Board and two executive groups with equal representation from NES and the Universities, and developing communication about SMERC through the 2012 NES Medical Education Conference, alongside the development of the SMERC website, Facebook and Twitter pages. We have also sought to build education research capacity among members of SMERC (researchers and users) through our medical education research seminar and workshop series, which is now regularly attended by our NES colleagues. We have long-standing relationships with other users of medical education research such as the Scottish Government and the Royal Colleges. Dundee's programme of research on the development and validation of workplace-based assessments of professionalism has led to their adoption by end users nationally (i.e. the UK Royal College of General Practitioners and the Scottish Government).

Impact has also been encouraged through publications written for practitioner (rather than academic) audiences. Examples from school education include **Miller** and **Moran** (2012), a text for primary practitioners, based largely on research carried out by the authors from 2005 to 2012. Similarly, in medical education, texts for practitioner and student audiences have been published, based on research conducted by **Ajjawi**: "Communicating in the health sciences", and "Researching practice: A discourse on qualitative methodologies" (2012 and 2010, respectively). Additional forms of dissemination have included pamphlets specifically produced for end users. School-based examples include newsletters and pamphlets summarising key findings from research projects (for example, related to recent projects on peer learning and global citizenship); these are written in non-technical language and include advice on developing classroom practice. In medical education, clinical teacher guides have been developed as part of the "Getting Started..." series, edited by **Dent**. These include background information and practical tips on how clinical teachers can make the most out of their clinical teaching role. Two recent contributions have been "Getting started with professionalism education", and "Getting started with medical education research", based on the research of **Rees** and **Ajjawi**.

The unit regularly uses the Press Office and the University website to disseminate findings and engage with the public and stakeholders. For example, a press release from the University of Dundee on the work of **Rees** et al., (2011) led to an article being published by an Australian Magazine, and subsequently appearing on one of Australia's most visited news websites, (news.com.au). This article was the most read story and one of the most Facebook recommended stories on the website for several days. It spawned further online articles on the websites of various Australian and American-based newspapers and magazines (e.g. foxnews.com; theaustralian.com; healthland.time.com) and blogs (e.g. medstudentonline.com.au). All of these stories and blogs were accompanied by countless comments from patients, members of the public, medical students and doctors. On the basis of this, **Rees** et al., were commissioned to produce a video pod called "the good, the bad and the ugly: media engagement in medical education research" by *Medical Education* (<http://www.youtube.com/watch?v=CRG5OaYGvAE&feature=youtu.be>).

Further strategies to enable impact include running conferences and workshops specifically for practitioners and representatives of local authorities, as outlined in the environment template. In addition, individuals are often invited to talk to practitioners and policy makers. For example, in medical education, **Rees** is regularly asked to run workshops on Professionalism Education within the contexts of medicine and dentistry (e.g. Wellcome Trust Conference Centre in London, and the Higher Education Academy, in York, both February 2012). Colleagues are encouraged and supported to work on partnership committees, national bodies and international groups, which serve as conduits for research, specifically at a policy-focused level. Examples include work on student teachers' mathematical competence (**Henderson** et al., 2008) that subsequently informed a national policy initiative on entry requirements in mathematics for student teachers. The work of the unit in developing impact is supported by various mechanisms, as described in the environment template. Budgets are available to support travel costs associated with activities such as attendance at practitioner-based events where work is disseminated. Further support is also available via the central university infrastructure, e.g. from Research and Innovation Services.

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c. Strategy and plans.

We see public and professional engagement activities as central to our plans to increase dissemination and impact. A key strategy is to focus not only on academic outputs but to communicate results to key users and monitor take-up and feedback (this is illustrated in one of the impact case studies.) As indicated above, the public and professional engagement activities of staff members allow them to advise and influence policy makers and use our current research to inform policy debates and developments. These links also help ensure that our research is relevant to key stakeholders. Our plan is to further enhance communication and engagement with users at different systemic levels: at national and international levels, through investigating opportunities to involve greater numbers of staff members in the work of steering groups, committees and governmental and non-governmental bodies related to our areas of research; and at the local level, through maintaining and expanding our involvement in committees and other partnership and liaison work. Such meetings provide many opportunities to share current research priorities.

At the level of practitioners, we will continue to increase opportunities for discussing our research in the course of our routine and professionally-focused meetings. These knowledge-exchange opportunities are afforded high priority. Additionally, as noted above, in the recent past, several research projects have been summarised for practitioner audiences. We are working to increase impact by highlighting practitioner voice in these reports, since teachers are heavily influenced by endorsements from their peers. One such example was a pamphlet including teacher reports from a recent Global Citizenship project. A similar practitioner emphasis applies to medical education, with reports of research projects being disseminated to heads of medical and healthcare schools in the UK and to NES. We are also developing our communications strategy, including more effective use of the university website, Facebook, Twitter and other social media, to further enhance public engagement. All of these strategies are aimed at diversifying our dissemination activities to help build relationships with key end users. Where valued partnerships already exist, we shall continue to work closely with individuals and groups, and investigate ways of strengthening such partnerships. This will include attracting suitable personnel to the unit, particularly those who have strong links with practice-based networks. A recent example of this policy was the recruitment of **Robertson**, National Advisor in New Technologies, from Education Scotland in August 2013.

d. Relationship to case studies

The interrelationship of research, public engagement processes, support provided by the unit and impact is illustrated in the case studies. The Fife Peer Learning Project (**Topping**) involved colleagues working in partnership with a local authority (>100 schools) to support and evaluate a pedagogical strategy. The impact of this particular project on pupils and teachers started in 2008 and continues to this day. The authority is one with whom we have a long-standing relationship across many fields: pre-service and in-service education, research and curriculum development.

- At the school level, measurable gains were found in key skills. As part of the project, over 100 schools received new learning materials (Duolog Maths), developed by UoA staff. Subject specialists within the School of ESWCE supported this activity.
- At the Local Authority level, the peer tutoring approach, based on **Topping's** work, has been adopted as official policy. Also, time was made available for staff from the UoA to present findings to several user groups, including primary and secondary head teacher groups.
- At the national level, the work was the subject of a webinar led by **Topping** for the National College for Leadership of Schools and Children's Services, influencing debate wider afield.

The game-based learning (GBL) case study (**Miller & Robertson**) involved working with several different groups, including Learning and Teaching Scotland, the Inspectorate of Schools, several local authorities and 32 primary schools. Impact on teachers and children dates from 2007/8. Again, links between research, public engagement, impact and support from the unit are evident:

- The case study testifies to significant impact on policy and practice. Regular interactions between unit staff and students and teachers (as above) help to maintain and enhance impact.
- At the regional level, GBL is now official policy in several regions, with unit staff maintaining relationships with advisors in those regions.
- At the national level, staff were supported to jointly present the work at the practitioner-focused Scottish Learning Festival. We also retain close working relationships with Education Scotland.