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# The Research Assessment Exercise (RAE) 2001 revisited—the University of Liverpool UoA11 experience

**Diane Scutt** *

*Department of Medical Imaging, University of Liverpool, PO Box 147, Liverpool L69 3GB, UK*

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**Abstract** The Research Assessment Exercise (RAE) is undertaken approximately every 6 years by the Higher Education Funding Council to examine the quality of research activity generated by academic departments. All departments delivering radiography programmes fall under RAE Unit of Assessment 11. The following review reports on the strategy adopted by the Department of Medical Imaging at the University of Liverpool for RAE 2001 and explores how departments delivering Allied Health Professions programmes, particularly radiography, may enhance their research performance for the next exercise.


## Introduction

The early 1990s saw the establishment of graduate programmes for most of the Allied Health Professions (AHPs) including radiography. This shift in educational focus brought with it a new agenda for staff responsible for the delivery of the AHP educational programmes in Higher Education Institutions (HEIs). Most of these academic staff originally came into teaching from traditional professional backgrounds in radiography when the agenda was of a purely educational nature and the remit of lecturers in further education (FE), where most diploma programmes were located, was to deliver the mainly knowledge-based curriculum. With the advent of degree programmes, lecturers found themselves in a Higher Education culture with a need to embrace the research ethos as a major part of their contractual obligation. 'There to teach' was no longer an appropriate summary of their role.

## Discussion

Traditionally radiography has been a consumer rather than a producer of research. In the early 1990s there was a general lack of engagement with the process as then, there was no apparent disadvantage at individual or departmental level to this

* Tel.: +44-151-794-5762; fax: +44-151-794-5766.
*E-mail address:* dunc@liv.ac.uk.

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approach and staff were often in teaching overload due to the intensive nature of the vocational programmes being delivered. AHP programmes are funded by the Department of Health (DoH) rather than the Higher Education Funding Council (HEFCE),[1] and it is from the latter that a substantial proportion of a university's income is generated. A varying proportion of the amount a university receives from the government is derived from that institution's research performance, both in terms of the quality of research output (publications and evidence of external esteem) and the research income generated from external sources such as funding councils and medical charities. It became obvious that there were advantages at institutional level to all of the 'new' programmes engaging in research activity, and the drive to establish a research culture in AHPs was increased.

There is a long lead-time in academic terms between turning up the research heat and coming to the boil. Existing academic staff development (gaining PhDs and establishing a research identity) is a lengthy process and did not feature in everyone's career plan when they came into teaching radiography. However, some saw this as an ideal opportunity to fulfil their professional and academic curiosity and aspirations. In addition, there is an evolutionary aspect to this whereby HEIs, particularly the more traditional red brick universities strongly support new appointments to individuals already in possession of a PhD. Not surprisingly, there are few such individuals around in professional practice in radiography. This article describes how the Department of Medical Imaging at the University of Liverpool approached the issue of increasing its research activity in order to make a useful contribution to the Research Assessment Exercise in 2001.

The Faculty of Medicine in Liverpool comprises four schools (Medicine, Veterinary Science, Dentistry and Health Sciences) and the Department of Medical Imaging is one of six departments in the School of Health Sciences. There has been a history of research activity within the department since 1994 with collaborations established both intra and extra-faculty. This activity was generated from PhD research being undertaken by three members of staff, all of whom were encouraged to publish results as they progressed through their higher degrees. As one of the criteria on which PhDs are awarded is whether the work can adequately withstand peer-review, then publications en route is a major quality indicator and certainly helps to focus the writing up process of the thesis.

The Research Assessment Exercise (RAE) is one that is undertaken approximately every five years, and requires all universities to submit extensive information relating to research output and research funding to the Higher Education Funding Council. Details of how institutions performed in the last three RAEs (1992, 1996 and 2001) can be found on the Higher Education and Research Opportunities (HERO) website.[2] There are 69 units of assessment (UoAs) dictated by subject area and the allied health professions feature under UoA11—Other Studies and Professions Allied to Medicine. All submissions are graded on an ascending 7-point scale in terms of quality (1, 2, 3b, 3a, 4, 5, 5*). Funding is determined by the rating and the volume of research in the relevant department. In 2001 most UoA11 submissions were not predominantly AHP submissions but were hybrids of more established research groups (e.g. biomedical sciences, vision science) plus AHPs. Where the submissions were predominantly AHP research activity, a grading of 3b or 3a was considered to be a good performance for what was in many cases their first submission to RAE.

When the strategy for the Research Assessment Exercise 2001 was undertaken at Liverpool, the research strengths and collaborations of the AHP departments were examined, and we identified three emergent themes—health care and professional practice, neurological systems and processes and reproductive and sexual health. UoA11 at Liverpool achieved a 3a and on this basis the institution has received additional funding from HEFCE.

The Faculty of Medicine at Liverpool has recently undergone a major restructuring exercise and has produced eight research themes to encourage research coherence and collaboration. Our neurological systems and processes theme is an AHP strength and is in line with the new Faculty strategy. Within the Department of Medical Imaging we have moved since 2001 from one staff member with a PhD to five in 2003—a combination of development of existing staff and the evolutionary process of new staff recruitment. We have made positive decisions in relation to rationalising teaching loads in order that staff have the time to engage in research activity as their contract specifies and have encouraged wherever possible productive collaborations with longer established research groups. Our current staffing for the undergraduate programme consists of five radiographers, one physicist and one radiologist.

The next RAE is likely to take place in 2007 and we have been working towards this since 2001. The nature of the 2007 exercise is not yet

known but research quality indicators are common knowledge—generation of external research income, high quality publications in international journals and evidence of external recognition. Research coherence and focus is essential if imaging, and particularly radiography is to establish itself as a research generator—it is only in this way that we can influence professional practice and improve the quality of service provided for patients. It is a fact that almost every branch of medicine uses imaging in the diagnostic or therapeutic process of patient management and yet the research generated from within the profession is still minimal. It is time for the 'nothing to do with me' blinkers to come off and for some lateral thinking in relation to imaging research. There is a wealth of research opportunity in other scientific areas just waiting for an application. Pure science departments are full of academics with clever solutions but they do not know what the problems are. Health care professionals have first hand knowledge and information on the problems but are often unaware of the scientific solutions possible. Evidence-based medicine is a term that is still 'ideal' rather than 'real' in the present day NHS as much of what we do, particularly in conventional imaging is still based on history rather than evidence. We have to think of imaging in its widest sense in order to establish research credibility, rather than limiting research activity just to radiographic practice.

In Liverpool we now have firm collaborations with larger established research groups, namely Physics, Electrical Engineering (novel breast imaging techniques), Clinical Engineering (VR modelling in cardiovascular imaging), Neurosciences (image analysis), Musculoskeletal Science (imaging soft tissue tumours), Magnetic Resonance and Image Analysis Research Centre and the regional Cardiothoracic Centre (treatment algorithms and cardiac imaging in angina). The clinical expertise offered by imaging professionals—radiographers—is invaluable in establishing the link so often missing between science and medicine. It is timely that we should take this agenda forward now, particularly in the light of the change in career structure for radiographers, the advent of the consultant practitioner[3] and the increased responsibility for quality care and evidence-based practice that must be assumed by all in respect of clinical and research governance agendas. The Department of Health (DoH) National Strategic Frameworks (NSFs)[4] provide a rich environment for research activity that is accessible for all who have the curiosity and commitment to improve quality health care. The research process should be demystified for health care professionals. It is no longer something ethereal that goes on in academia—it is a real process in which we are all involved. The quest for the best treatment, the best protocol, and the most effective care pathway is part of the day-to-day work of health professionals—this is research at its most productive and yet the thought of it is still intimidating for many. Research confidence and capacity need to be strengthened in radiography. Clinical experience is so valuable to developing and promoting evidence-based practice and yet much of this experience is wasted because many experienced radiographers do not take the opportunity to pass on their ideas for good practice to the professional community—i.e. they do not publish their work. This is usually for three main reasons: (a) they do not consider 'their idea' (research question!) to be important enough to develop, and/or (b) they are unaware of internal or external funding sources for looking for answers to clinical questions (research!), and/or (c) they do not know how to go about 'getting published'. Here's a challenge. Think of one (any) imaging examination at which you are particularly accomplished. Is your method maybe just slightly different to that of your colleagues? Is there some tweak that you make to positioning, for example, that guarantees good results most of the time? Is there something that you say to patients that seems to help? My guess is that most clinical radiographers will have said yes to at least one of the above and there are many more examples. These are research ideas that should be taken forward by testing the experimental hypotheses under scientific conditions. Academic colleagues are usually very happy to provide advice and expertise on how research questions can be put to the test and answered. The professional imaging community should be party to your results so that radiographers can learn from each other's best practice, and disseminate 'trade secrets'.

A major review of health care programmes by the Quality Assurance Agency (QAA) is imminent[5] and in line with the QAA's Benchmarking Statement for Healthcare Programmes (Radiography), research methodology and statistics must now form an integral part of radiography undergraduate programmes.[6] In Liverpool we are training radiographers of the future to be research aware and competent in the basics of statistical manipulation and analysis. We have developed an interactive research methods and statistics course that is multiprofessional and we have an active research seminar series across 10 departments to encourage staff and postgraduate students to disseminate

their findings and encourage publication. The School of Health Sciences also offers one Healthcare Professions PhD studentship per year and we have a research pump-priming fund, both specifically aimed to foster and promote the research culture in AHPs in Liverpool.

We feel that our strategy is working as evidenced by our first submission RAE 2001 grading of 3a, and by linking with established research departments we now have external funding applications in process totalling £500,000. These are all projects with a direct imaging application that have the potential to change future practice, as opposed to purely theoretical academic pursuits. Learning, teaching and professional practice should be research led, and by establishing this as the norm we equip the graduates of the future with the necessary skills and powers of critical analysis and self-evaluation that will prepare them well for their future careers in health care.

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