



**An update on evaluation in the
researcher training and development
sector and the implementation of the
Rugby Team Impact Framework**

**Draft report
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An update on evaluation in the researcher training and development sector and the implementation of the Rugby Team Impact Framework

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'An update on evaluation in the researcher training and development sector and the implementation of the Rugby Team Impact Framework' has been written on behalf of the Rugby Team by:

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Produced as part of a series of activities and publications by the Rugby Team:
www.vitae.ac.uk/rugbyteam

The Rugby Team is a sector-led working group, drawn from a cross-section of HEIs and other relevant stakeholders, with a mission to *'propose meaningful and workable ways of evaluating the effectiveness of skills development in early career researchers'*.

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Incorporating the UK GRAD Programme and UKHERD, supported by Research Councils UK (RCUK) and managed by CRAC: The Career Development Organisation



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Executive Summary

'The Rugby Team Impact Framework' (RTIF)¹ is '*an evaluation model for training and development activity specifically tailored to the context of training and development of researchers in higher education (HE)*'. The RTIF was presented in draft form to the Roberts Policy Forum in January 2008² and in a finalised format, following sector consultation, at the National Vitae Conference in September 2008³.

This report provides an overview of evaluation activity in the researcher training and development sector, mapped against the RTIF. Work carried out during 2008 and that planned for future years is reviewed. Also included is an overview of the support provided to the sector aimed at growing evaluation activity.

There is much evaluation work to be done, but this report demonstrates strong and growing evaluation activity across the sector, in what are the early stages of growth in the evaluation of training and development against the drivers stated in the RTIF for building the evidence base.

The value of the RTIF in providing a national framework and 'language' for evaluation is demonstrated. The contribution of data generated from wide ranging evaluation activities, which necessarily use many differing methods, can be clearly seen when mapped against the RTIF.

¹ Bromley, T., Metcalfe, J. and Park, C. (2008) 'The Rugby Team Impact Framework' published by Careers Research Advisory Centre (CRAC) Limited, ISBN-13: 978-1-906774-00-4 www.vitae.ac.uk/CMS/files/1.Rugby%20Impact%20Framework_33.pdf (accessed 15/12/08)

² www.vitae.ac.uk/policy-practice/13945-2787/UK-GRAD-National-Policy-Forum.html

³ www.vitae.ac.uk/policy-practice/13945-2774/Vitae-Researcher-Development-Conference.html

Report to the Roberts Policy Forum 2009

An update on evaluation in the researcher training and development sector and the implementation of the Rugby Team Impact Framework

1.0 Introduction

This is a first update report on evaluation activity in the researcher training and development sector to the Roberts Policy Forum, following the finalising of the Rugby Team Impact Framework (RTIF)¹ during 2008.

The sector has always evaluated activity, however, it is clear that activity in evaluation is growing and, in many cases evaluation is being done in greater depth than has previously occurred.

The report provides an overview of evaluation activity in the sector, mapped against the RTIF. Work carried out during 2008 and that planned for future years is reviewed. Also included is an overview of the support provided to the sector aimed at growing evaluation activity.

2.0 Background

The drivers for growth in evaluation activity in the sector are set out in the RTIF⁴ as:

'The imperative to identify coherent and transparent ways to evaluate has arisen from a number of drivers, including the need to:

- demonstrate the appropriateness of the emphasis on skills development of researchers*
- provide feedback to funding bodies, such as RCUK and the UK funding councils, and to government, who need to evaluate the effectiveness and impact of their investment and on the economy*
- inform the enhancement of the quality of the experience for postgraduate researchers (PGRs) and research staff (RS), both within individual HEIs and across the sector in line with initiatives such as the 'QAA Code of Practice for Postgraduate Research Programmes' and the 'Concordat to Support the Career Development of Researchers'*
- assess the impact of recent initiatives, particularly the Roberts Funding, on the employability (and perceived employability) of PGRs and RS'.*

The 'Rugby Team' was formed following the January 2005 Roberts Policy Forum held in Rugby. A key task of the group was⁵, *'to contribute to a strategic debate with national stakeholders on how to evaluate the effectiveness of skills development amongst postgraduate researchers (PGRs) and research staff.'*

⁴ Bromley, T., Metcalfe, J. and Park, C. (2008) 'The Rugby Team Impact Framework' published by Careers Research Advisory Centre (CRAC) Limited, ISBN-13: 978-1-906774-00-4 www.vitae.ac.uk/CMS/files/1.Rugby%20Impact%20Framework_33.pdf (accessed 15/12/08) p 3

⁵ 'Evaluation of Skills Development of Early Career Researchers – a strategy paper from the Rugby Team' www.vitae.ac.uk/cms/files/Rugby-Team-annual-report-January-2006.pdf (accessed 15/12/08)

The outcome of the Rugby Team development work on evaluation was the RTIF. The RTIF was presented in draft form to the sector at the Roberts Policy Forum January 2008 and then as the finalised version¹ to the Vitae National Conference September 2008. Reference to the 'Impact Framework' was made in the Roberts reporting letter from RCUK to HEIs in August 2008. HEIs were encouraged to add examples of their evaluation practice to the Vitae Database of Practice (<http://www.vitae.ac.uk/dop>).

At the core of the RTIF evaluation model are a set of impact levels that form a logic progression⁶. The RTIF defines the levels as follows:

Impact Level 0: Foundations

This level relates to investment that leads to development of the infrastructure for training and development activity, such as the employment of additional staff, a larger programme of training workshops and other activities being offered, or training facilities being refurbished. Metrics such as the number of training opportunities offered, the number of researchers participating, or a more specific example such as the number of researcher interactions with industry as the result of a particular training activity, are examples of level 0 impact measures, these primarily measure inputs and throughputs. From a different perspective, that of a researcher as a participant in training and development activity, level 0 would be 'baseline' assessment of skills and training needs.

Impact Level 1: Reaction

This level indicates the reaction of participants to training and development activities. For example, at the end of a workshop participants may be asked what were their views of the experience? What were their views of the training programme as a whole?

Impact Level 2: Learning

This level reflects 'the extent to which participants change attitudes, improve knowledge, and/or increase skill as a result of attending the programme'⁷. For example, does a researcher have a better understanding of how to work effectively within a team as a result of participating in a development opportunity?

Impact Level 3 Behaviour

This level reflects 'the extent to which change in behaviour has occurred because the participant attended the training programme.'⁷ Is the researcher now managing their project and time better as a result of the development activity? How has the researcher applied what they have learnt?

Impact Level 4: Outcomes

⁶ The basis of the logic progression is the work of Kirkpatrick. The critiques of Kirkpatrick, for example Kearns, are also reflected.

Kirkpatrick, D. L., and Kirkpatrick, J. D., (2006) '*Evaluating Training Programmes*', Third Edition, Berrett-Koehler Publishers Inc ISBN-10: 1-57675-384-4; ISBN-13: 978-1-57675-384-4

Kearns, P. and Miller, T., (1997) '*Measuring the Impact of Training and Development on the Bottom Line*' Pitman Publishing ISBN 0 273 63187 X

⁷ Kirkpatrick, D. L., and Kirkpatrick, J. D., (2006) '*Evaluating Training Programmes*', Third Edition Berrett-Koehler Publishers Inc p 22

This level measures the final results of the training and development activity. Have changes in behaviour resulted in different outcomes? Has the quality of research improved? Is there a more highly skilled researcher workforce?

3.0 Implementation plans and support to the sector

The implementation plans for the RTIF have focussed upon two main aims firstly, activity to support growth in evaluation in the sector and secondly, putting in place communication mechanisms.

Table 1 summarises the steps in implementation during 2008 up to the Vitae Conference (Sep 08), Table 2 summarises the events and activity of 2008 and the plans for 2009. Table 3 summarises the communication mechanisms now in place.

Date	Activity
Jan 08	Presentation of the draft Impact Framework at the Policy Forum
Jan - Feb 08	Survey of Policy Forum participants to obtain feedback
Aug 08	Inclusion of reference to the Impact Framework in the Roberts reporting letter from RCUK to HEIs. HEIs also encouraged to evaluate their programmes and to add examples of their evaluation practice to the Vitae Database of Practice (http://www.vitae.ac.uk/dop).
Sep 08	Publication of a final version of the Impact Framework reflecting sector feedback, available in hard copy and circulated to participants at the Vitae Conference 8 th - 9 th September.
Sep 08	Two Vitae Conference workshop sessions referring to the RTIF, 'Measuring the impact of skills development' and 'Reviewing and evaluating skills training'
Sep 08	RTIF published on the Rugby Team website

Table 1: The steps in implementation of the RTIF during 2008 up to the Vitae Conference (Sep 08)

Date	Activity
Oct 08	'Focus on... evaluation' South West and Wales Hub event 15 th October
Nov 08	'Researcher training: evaluation and return on investment (ROI) workshop' Paul Kearns, Yorkshire and North East Hub, two sessions November 10 th and 11 th
Dec 08	'Building the evidence base - evaluating researcher training and development activity' session at 'Good Practice Workshop' North West Hub, 5 th December
Jan 09	Policy Forum: keynote presentation 'Progress in implementing the Rugby Team Impact Framework' and workshop session 'Using the Rugby Team Impact Framework in practice'
Apr 09	An SRHE publication as part of their 'Issues in Postgraduate Education Series' www.srhe.ac.uk/publications.gpi.asp The publication is currently titled 'A Guide to Evaluating Postgraduate Researcher Training and Development Programmes'
Jun 09	Evaluation trainers and developers forum. Yorkshire and North East Hub, 11 th June

Table 2: Summary of evaluation events and activity of 2008 and the plans for 2009.

Timing	Activity
Quarterly	Updates in Vitae Hub newsletters
Annual	Evaluation updates at Roberts Policy Forum and Vitae national conference
Ongoing	Contributions from the sector of examples of practice to the evaluation section of the Vitae Database of Practice
Ongoing	JISCMail 'Evaluating Impact' email network (currently has 80 members). The aim is to provide a mechanism for sharing of information, ideas and practice around the sector. (To join, email a request to t.p.bromley@adm.leeds.ac.uk)
2009	A new Journal: 'International Journal for Researcher Development' will be launched during 2009. Led by Denise Dear of the University of Cambridge. The journal will include an evaluation remit and 20 Universities have been involved in its inception
Sep 2010	A review of sector evaluation practice primarily based on the evaluation section of the Vitae Database of Practice will be carried out during 2010 with a report published at the Vitae Conference

Table 3: Summary of communication mechanisms now in place.

4.0 Evaluation activity

This section provides an overview of the work of many colleagues across the higher education sector in evaluating researcher training and development. Both completed projects and projects planned in the near future are covered. Activity ranges from those undertaking work of a long term in depth nature to those who have identified interesting correlations in existing evaluation activity. It is important to note that all contributions to building the evidence are entirely valid, be they large or small scale. It is the communication and collation of evidence across the sector that is key. For example, an indication of impact found by one practitioner from their standard workshop evaluation forms may not be perceived as a particularly powerful contribution to the evidence base. However, if the information is shared and practitioners in many institutions have similar findings the findings can become increasingly important.

Further details in the form of 'case-study' reports for a number of the evaluation activities discussed here are provided in Appendix I and II. Tables 4 and 5 map each project against the RTIF. A summary of activity is given below.

4.1 Completed evaluation

There have been a number of studies that align with impact level 0 - foundations. At the programme level the University of Leeds has reviewed provision for research students using the 'Foundation Elements' highlighted in the RTIF as a basis for investigation. Findings of the review have been developed in to a strategic development plan⁸. Also at the programme level a review of CPD for research staff at a Russell Group university has been carried out using a methodology of survey and focus groups⁹. Focus groups provided both qualitative and quantitative information. The review provided valuable information for improving the programme, but also highlighted interesting 'baseline' foundation level information for the research

⁸ See the entry on the Vitae Database of Practice at www.vitae.ac.uk/policy-practice/1392/Resources.html

⁹ Dr. Andrew Bottomley, BHR Associates, BHRAssociates@netscape.net

staff group. Participants had little work experience post PhD completion and had ambitions for academic careers. Average ratings for current skills levels fell short of the levels thought to be required for intended job roles including in such aspects as project/time management, organising skills and communication. Additional skills the group stated as relevant to their objectives included adaptability, networking/collaboration and negotiating.

There have also been studies at the foundation level 0 and higher levels relating to the needs analysis of participants in training and development workshops and programmes^{10,11}. Alpay and Walsh have recently reported on the use of their Skills Perception Inventory (SkiPI). The Inventory was used to look at the effects of a three day residential programme on research students in the early stages of their research. Skills areas addressed include; group work; communication skills; planning and project management; personal awareness. Statistically significant increases in participants perceived skills levels in each area of the inventory following the workshop were demonstrated as was a more positive attitude to skills development courses overall.

Bromley et al⁷ have reported on the use of a 'Development Needs Analysis' tool to provide a baseline needs analysis of research students starting a research degree programme. Overall, the most significant needs were identified in areas of presentation, public understanding of research, commercialisation of research and research skills.

Cardiff University have found evidence of the impact of carrying out needs analysis from their 2008 'Postgraduate Research Experience Survey' (PRES)¹². Postgraduate researchers, *'gave relatively higher scores to supervision, skills development, infrastructure, intellectual climate and goals/standards if they had reviewed their development needs and assessed how to progress them in relation to research skills and transferable skills as well as other development needs; if the review of their development needs had been agreed with their supervisors; and if actions to meet their development needs had been incorporated into their research plan'*¹³.

There was also a significant positive relationship between these measures of participation in needs assessment and their overall experience of the research programme.

Comparison between 06/07 and 07/08 research student annual review survey data at Durham University¹⁴ (which surveys the whole PGR student body annually - approximately 1500 students per year with a near 100% return rate) showed increasing participation in needs analysis and increasing satisfaction in terms of research training needs being met and the training programme as a whole.

¹⁰ Alpay, E and Walsh E, (2008) 'A skills perception inventory for evaluating postgraduate transferable skills development' Assessment & Evaluation in Higher Education 33 (6), 581–598

¹¹ Bromley, A. P., Boran, J. R., and Myddelton, W. A. (2007) 'Investigating the baseline skills of research students using a competency based self-assessment method' Active Learning in Higher Education, 8 (2) 117-137

¹² www.heacademy.ac.uk/ourwork/research/surveys/pres (Accessed 15/12/08)

¹³ Correspondence with Terri Delahunty, Head of the Graduate Centre, Cardiff University

¹⁴ Correspondence with Lowry McComb, Director of Postgraduate Training, Durham University

Evaluation at the foundation level 0 is essential in defining a 'baseline' from which progression in development of individuals and programmes can be measured.

Moving on to impact levels 1 and 2, Bangor University PRES 2008 has indicated an improvement in the understanding of thesis examination amongst research students in respect of the 2007 findings (3% above the sector rather than 7% below in 2007). It is suggested that this relates to the impact of skills training in this specific area.¹⁵

Leicester University¹⁶ have carried out an evaluation of a GRADschool that has indicated impact on participants at levels 2 - 4. Seven months after a GRADschool they held a one-day follow up event 'One Step Beyond GRADschool'. A significant part of the programme included guided active reflection. The facilitator support provided the opportunity for more detailed, and qualified feedback than would be possible using a 'standard' feedback form approach. (Further details of this project are provided in Appendix I Case Study 1). Some interesting level 3 behaviours highlighted included focus on finishing PhD, achieving a better work life balance and changed and improved relationships with the supervisor. At level 4 outcomes, there was direct attribution of the GRADschool to gaining employment.

The University of Southampton¹⁷ Faculty of Science, Engineering and Mathematics (FSEM) have evaluated their 'Outreach and Public Engagement Skills Training' (See Appendix 1 Case Study 2 for full details). Research student and research staff participants attend a set of workshops in a one day programme before making short presentations to secondary school pupils. When participants present to schools the process is managed by school pupils and the pupils provide feedback to participants. Prior to the presentations University staff also work with the schools to establish an evaluation protocol. The evaluation of the programme in 2008 has indicated impact on participants at a number of levels in relation to the RTIF. In terms of level 1 reaction, participants expressed positive views towards the programme; 'Presenting to the kids and getting firsthand, relevant feedback. Great for improvement'. And for level 2, expressed agreement with evaluation statements around increased confidence and learning of new skills. The programme is now in its fourth iteration and level 4 outcomes include substantial numbers of participants applying for FSEM funding for further outreach work and developing projects in the wider university.

During the 06/07 academic year the University of East Anglia¹⁸ ran a project considering '*The Dynamics of Team Learning in Postgraduate Generic Skills Training*'. The study used a 'mixed-methods' approach and gathered data from around 300 first year postgraduate research students who had taken part in team learning activities. Key conclusions in respect of the impact of team working activity included:

1. Activity was supportive to international students who have English as a second or other language;
2. Working as a team is, itself, felt as facilitative and supportive for research students in general;

¹⁵ Correspondence with Penny Dowdney, Academic Development Unit, Bangor University

¹⁶ Elizabeth Newall, Postgraduate Events Manager, University of Leicester, Vitae Database of Practice entry www.vitae.ac.uk/dop

¹⁷ Correspondence with Steve Dorney, Outreach Co-ordinator & Science Communicator, Institute of Sound & Vibration Research University of Southampton

¹⁸ Correspondence with Stephanie Aspin of the University of East Anglia reporting the work of Liam Aspin Kings College, London, Stephanie Aspin UEA and Richard Draeger UEA

3. Engaging in teamwork seems to develop a range of transferable skills (sometimes over and above those targeted by the pre-defined task aims and outcomes);
4. The opportunity to interact with researchers, across disciplines was valued;
5. Over seventy percent of postgraduate researchers reported an improvement in four or more skill areas.

Finally in this section, the University of Strathclyde¹⁹ have carried out a research study, *'What are they doing out there? Research graduate skills for innovation in small high technology companies'*. The study confirms the employer view for the need to develop skills in innovation with researchers. Potential researcher skills frameworks for innovation were developed through grounded theory analysis of in depth interviews with owner managers, research graduate employees, research students and representatives from Government agencies. The need was highlighted for behaviours including intrapreneurship, cultural transition, switching between multiple mental models for technology and business, being multi-functional and multidisciplinary.

4.2 Evaluation activity planned or in progress

There are multiple sector wide projects planned for 2009 and beyond. There are projects that will look at evaluating single impact levels and those that will include multiple evaluation tasks to investigate impact across the full RTIF.

There are evaluations at programme level, workshop level and long term longitudinal studies. Table 5 maps planned projects against the RTIF. Appendix II provides further details of two example case studies.

At the London School of Hygiene and Technical Medicine (LSHTM)²⁰ there is development of evaluation forms focused around course descriptors to develop the impact information received from participants from impact levels 0 - 1 to levels 2 and 3. This is part of a wider strategy to embed the practice, and concept, of continuing professional development within a research degree programme of study. There is similar work at Newcastle University²¹ where reconsidering the evaluation form allows participants and evaluators to reflect more meaningfully on the skills developments offered and made.

At the University of East Anglia there is a study looking at the 'Self-Perception of skills in students making the transition to PhD'²². The project considers the experience of PhD researchers in the early stages of their research and their transition towards independent researchers, looking at the skills perceived to be developed through skills training activity.

Imperial college²³ are continuing their work using SkiPI but now looking at end stage PhD researchers. In particular the study looks at researcher reflections on how far they feel they have improved in confidence relating to a number of transferable skills areas and to what extent they attribute their skills development to a range of factors.

¹⁹ Correspondence with Alison Mitchell, University of Strathclyde

²⁰ Correspondence with Lucy Allen, Management Support Officer, LSHTM

²¹ Correspondence with Richy Hetherington, Postgraduate Skills Development Co-ordinator, Faculty of Medical Sciences Graduate School, Newcastle University

²² Correspondence with Stephanie Aspin, Postgraduate Skills Tutor, University of East Anglia

²³ Correspondence with Elaine Walsh, Senior Lecturer in Transferable Skills, Imperial College

The aim overall is to develop a fuller picture of how research students perceive their development occurs. The work is likely to elucidate impact at levels 2 learning and 3 behaviour.

Coupling the early work at Imperial with early stage doctoral researchers (reported earlier) with the new work on end stage researchers provides the opportunity for some longitudinal comparisons. There are also a number of further planned studies with longitudinal themes. It is longitudinal type studies that have the best opportunity of building evidence of level 4 outcomes and the relationship to training and development activity. Level 4 is the most difficult area to demonstrate relationships between training and development activity and ultimate outcomes so it is valuable that a number of projects are looking at this level.

In addition to the GRADSschool follow up project detailed in Appendix I, the University of Glasgow²⁴ have a planned follow up event to their 'Effective Researcher' workshops for those who have attended in the previous 18 months. Those who can not attend will be contacted via email.

The University of Nottingham²⁵ have a longitudinal project contacting former research students who have experienced research training since the 2004/05 academic year. The project will look to evaluate impacts at levels 3 and 4 and will also feed into enhancing provision at Nottingham. Nottingham also have work looking at skills developed and deployed during industrial placement working with the Centre for Career Development and partner organisations.

The University of Leeds, Faculty of Engineering²⁶ will be carrying out a longitudinal study consisting of an exit survey of all research staff and research students looking at the value of training and development activity and the researcher experience. In addition they are doing a more detailed tracking study of research students registered between 1st November 2008 and 31st October 2009. This study will look at researcher perceptions of their skills, impact of skills development on research performance and the factors that have contributed to personal development. (See appendix 2, case study 3 for further details)

The Rugby Team²⁷ is developing a, 'Researcher career profiles framework', supporting the building of the evidence base through clarifying the information of interest to stakeholders in terms of level 4 outcomes and career profiles.

The project was created in response to recognition from a wide range of stakeholders that better information is needed to inform researcher career choices. Career profiles have a role in improving the understanding of the career paths followed by researchers as well as in demonstrating the wider impact researchers have on culture, society and the economy in the UK.

The project has identified the particular interests that different stakeholder groups have in career profiles. From this a set of key areas/questions will be created with the

²⁴ Correspondence with Elizabeth Adams, Research and Enterprise Skills Training Officer, University of Glasgow

²⁵ Correspondence with Parmjit Dhugga, Researcher Development Manager (Engineering), University of Nottingham.

²⁶ Correspondence with Patricia Gray, Graduate Skills Training Manager, Faculty of Engineering University of Leeds

²⁷ Correspondence with Ellen Pearce, Vitae and Rugby Team member

aim to meet the needs of all stakeholder groups, from researchers to career advisers to government. If we can identify a broad framework, there is an opportunity to have greater commonality in the collection of career profiles such that analyses of larger datasets would be possible.

The intention is to confirm a set of key areas/questions in Spring 2009 to begin to inform work in collecting career profiles'.²⁷

The UK Research Councils have recently instigated a major longitudinal study into the career paths of doctoral researchers. RCUK, *'wish to broaden and deepen current understanding of the value and impact of doctoral training'*²⁸. The study will initially include enhancement of the Higher Education Statistics Agency survey which asks graduates about their careers and choices approximately three and half years after graduation. The results of this survey will be available in May 2009 and analysis will inform future phases of the project. In addition there will be collection of case studies and career profiles. It is likely that useful information contributing to impact level 4 outcomes will come out of this project.

There are a number of planned projects looking at evaluation of specific skills and activity. The University of Kent²⁹ are directing a national project looking at assessment and evaluation methods and their impact within courses. The University of Edinburgh³⁰ will be evaluating their EPSRC entrepreneurship funded activity using a 'repeated measures methodology' developed by the Education for Higher Growth Initiative group³¹. The University of Leeds³² will be carrying out a number of studies on various aspects of provision; the role and impact of skills training in promoting and developing researcher public engagement; evaluating the benefits of NVivo (qualitative analysis software) training for postgraduate researchers and research staff and the perceived benefits of incorporating the software in research; a survey of supervisors to evaluate the impact of training and development activity in engineering; evaluating the impact of grant writing activity; evaluating the impact of speed reading training and development activity. The speed reading evaluation will aim to evaluate a focussed training and development activity at each level of the impact framework including assessment of learning during a training workshop.

Finally, the University of Sheffield³³, 'School of Medicine and Biomedical Sciences' have created a new postdoctoral researcher continued professional development programme fully embedding evaluation in the programme at the outset (For further details see Appendix II, case study 4). The evaluation includes a baseline study, monitoring measures and collection of metric and case study data.

²⁸ Correspondence with Kate Reading RCUK and 'Building Evidence of Researchers' Impact' www.rcuk.ac.uk/rescareer/rcdu/impact.htm (accessed 16/12/08)

²⁹ Correspondence with Martin Gough, Lecturer in Higher Education and Academic Practice, University of Kent. Further information available at www.kent.ac.uk/uelt/academic-practice/support-for-teaching/externally-funded-projects.html

³⁰ Correspondence with Donna Murray, Transferable Skills Unit, University of Edinburgh

³¹ www.cambridge-mit.org/project/home/?objid=1613 (accessed 16/12/08)

³² Tony Bromley, Odette Dewhurst, Paula Fallon, Patricia Gray, Katharine Griffiths, University of Leeds

³³ Correspondence with Lucy Lee, School of Medicine and Biomedical Sciences, University of Sheffield

5.0. Summary and looking forward

There is clearly significant and growing evaluation activity in the sector and plans to support continued growth. It is also clear that by continuing to work collaboratively in sharing information, as in this report, the sector can be confident in achieving the aim of building a significant evidence base for researcher training and development over the coming years.

Evaluation activity can make a valuable contribution to building the evidence base whether it is on the small scale such as level 1 reaction responses from participant feedback forms or a large scale project considering the whole RTIF. On the small scale, whilst a single observation in itself may not be considered important, if shared across the sector the small scale work can become increasingly significant and powerful as more institutions express a similar observation.

Enhanced evaluation practice can also be achieved by building upon existing evaluation through, for example, adding in focus groups or canvassing supervisor views. Evaluation that provides information on the impact of provision on participants also enhances the practice of the institution.

The 'Rugby Team Impact Framework' has been valuable in providing a national evaluation framework and 'language' such that the contribution of data generated from wide ranging evaluation activities, which necessarily use many differing methods, can be clearly seen in the context of a single framework.

There is much evaluation work to be done, but this report presents an excellent level of evaluation activity in what are the early stages of growth in the evaluation of training and development against the drivers stated in the 'Rugby Team Impact Framework'.

Project	Level 0	Level 1	Level 2	Level 3	Level 4
University of Leeds Foundation Level 0 review	✓				
BHR Associates review	✓				
Imperial Skills Perception Inventory	✓	✓	✓		
Development Needs Analysis - baseline study	✓				
Cardiff University PRES	✓	✓			
Bangor University PRES			✓		
Leicester University 'One Step Beyond GRADschool'		✓	✓	✓	✓
University of Southampton 'Outreach'		✓	✓	✓	✓
UEA Dynamics of Team Learning		✓	✓		

Table 4: Evidence Table: Mapping of completed evaluation projects against the Rugby Team Impact Framework. A '✓' signifies that a project has identified evidence of impact at the indicated evaluation level. Projects are listed in the order they appear in the report text.

Project	Level 0	Level 1	Level 2	Level 3	Level 4
Imperial end stage PhD researchers	✓	✓	✓	✓	
LSHTM evaluation forms		✓	✓		
Newcastle University evaluation forms		✓	✓		
UAE Self-perception of skills			✓	✓	
University of Glasgow Effective Researcher follow up			✓	✓	
University of Nottingham longitudinal project				✓	✓
University of Leeds Engineering longitudinal				✓	✓
Rugby Team researcher career profiles					✓
RCUK longitudinal					✓
University of Kent evaluation in course			✓		
University of Edinburgh Entrepreneurship	✓	✓	✓	✓	✓
University of Leeds multiple skills projects	✓	✓	✓	✓	✓
University of Sheffield Postdoc CPD programme	✓	✓	✓	✓	✓

Table 5: Evidence Table: Mapping of planned evaluation projects against the Rugby Team Impact Framework. A '✓' signifies the project aims to identify evidence of impact at the indicated evaluation level. Projects are listed in the order they appear in the report text.

Appendix I - Case studies of completed evaluations mapped against the Rugby Team Impact Framework.

Case Study 1: 'One Step Beyond GRADschool', Elizabeth Newall University of Leicester

"I had a fantastic time. It was an immensely valuable experience for me, and I now feel better equipped to cope with the ups and downs of life as a research student, and more confident and positive about my longer term future. I also learnt a great deal about myself, and feel more aware of some personal strengths and weaknesses. For me, it was definitely a course which helped me step back and look at the 'big picture', and although many of my issues and concerns still exist, I somehow feel happier in myself, more in control of my future and able to think effectively about my objectives and ways to achieve them."

This quote was typical of those provided by participants in their written feedback at the point of exit from Leicester's first local GRADschool. All of the feedback was overwhelmingly positive, with many participants going so far as reporting that the impact of the 3-day residential course had been profound.

Aims

As Course Manager, leaving the GRADschool with this feedback was extremely gratifying. However, this feedback was an immediate response from participants who, at the point of giving it, had not left the venue. It was therefore going to be of considerable interest and value to ascertain whether the effects of the rich learning experience derived from attending the GRADschool would still be felt in the weeks and months that followed.

As such, Course Director, Dave Filipović-Carter, and external tutor, Jamie McDonald, were commissioned to design a bespoke training programme for a follow-up day for the Leicester GRADschool participants. From an institutional perspective, the aims of this programme were to: assess the longer-term impact of the GRADschool on its participants; establish what further training and support could be put in place to help the participants to continue to realise the objectives with which they left the original course; and, to strengthen the community of postgraduate researchers at Leicester. For the participants, the aims were to: recapture the positive energy with which they left their GRADschool; reflect on the medium-term impacts of the course in the intervening period; consider how to take this further forward into their PhDs and beyond; and, produce new personal action plans.

Methodology

'One Step Beyond GRADschool', a one-day course, was run seven months post-GRADschool by its designers, Dave Filipović-Carter and Jamie McDonald, with additional facilitation provided by some of the original tutors and course staff. Guided, active reflection formed a significant part of the programme, with various activities and interventions designed to elicit the impact of the original GRADschool. Practical exercises followed in which groups contributed towards new materials as well as the programme and publicity for the next GRADschool, and highlighted further training needs which the Leicester research skills training programme could address. The programme was drawn together by participants clarifying personal and professional objectives and preparing action plans.

Key impacts of the GRADschool revealed by the follow-up day

In terms of the Rugby Team Impact Framework, table A1 indicates key impacts of the GRADschool experience reported by the participants seven months post-course:

Impact Level	Detail of GRADschool impact on participants seven months post-course
2	Learnt how to change and progress; Learnt how to reflect; Proved that I could deal with external and different challenges; Learnt to react differently to situations in a better way for me; Learnt how to be more flexible; Learnt how to deal with others better; Realised that communication is vital and criticism useful; Learnt how to tackle confrontations; Learnt how to listen to other people; Realised I am able to choose direction of life; Created awareness of possibilities; Overcame apprehension, loneliness and isolation; Gained self-confidence; Increased confidence to make life decisions; Became more assertive
3	Made decisions and then acted on them; Made me stop and think through situations; Made more informed decisions: Changed and improved relationship with supervisor (more communication); Led to better working relationships; Meeting different people made me more tolerant towards others; More clarity and ownership of PhD; Gave me focus on finishing PhD; Applications became more ambitious; Looked at different options for life; Decided on what to do next; Allowed me to make/validate decision; Led to more balanced life; Made me happy again; Made me see bigger picture; Taken on more challenges; Life changing; Achieved a better work/life balance; Accepted that I am different and there is space for me
4	Got a job Offered a postdoc as direct result

Table A1: key impacts of the GRADschool experience reported by the participants seven months post-course

'One Step Beyond GRADschool' showed that the University of Leicester's GRADschool had continued to impact on participants over the seven months that followed, and provided a strong indicator that these impacts would still be felt for some considerable time to come. For further information, please contact Elizabeth Newall, Postgraduate Events Manager, University of Leicester, on 0116 223 1775 or en26@le.ac.uk, Jamie McDonald (01530 272349, Jamie.mcdonald@skyward.co.uk) or Dave Filipović-Carter (0795 1166 156 drdjfc@googlemail.com)

Case Study 2: 'Outreach and Public Engagement Skills Training', Dr. Steve Dorney, University of Southampton FESM (Faculty of Science, Engineering and Mathematics)

Background

This is a course developed and hosted by ISVR (Institute of Sound and Vibration Research) but available to all Faculty post-grads and post-docs. Participants attend a set of workshops over one day. These workshops are delivered by both University outreach specialists and by external consultants. External expertise is used to frame the course in a national public engagement context and to provide insight into the school, youth and community sectors. Participants are also required to make short

presentations to pupils from a local secondary school, and these pupils provide immediate critique and feedback.

The course has three objectives:

1. to build and sustain outreach and public engagement capacity across the Faculty
2. to provide an opportunity to practice and reflect on individual outreach and public engagement activities before 'going live'
3. to increase the overall quality of outreach and public engagement
4. to build and sustain external partnerships with non-University sectors

At the time of writing (November 2008) the course is in its fourth iteration.

Evaluation aims

- In the short term, we want to know if our target audience (post-grads and post-docs) find the course useful
- Also in the short term, we want to understand what the participants have learnt from their experience of the course
- In the medium term, we want to know how they have used skills developed on the course
- In the longer term, we want to identify novel or extended activities that are clearly linked to participation on the course

Evaluation methodology

In-course evaluations by school pupils: Before the course, University staff work with pupils from a local secondary school to establish an appropriate evaluative protocol. This is an extension of the school's own programme for Learning Monitors (ie pupils assess teaching quality). In practice, this means letting the pupils use their existing system on sample presentations, and adapting the mechanism as appropriate. Participants are fore-warned that: they need to prepare a 10 minute presentation; they will repeat it to 2 different groups; they will get immediate feedback. Pupils manage the presentation session, introducing themselves, inviting speaker to start, keeping time, etc. At the end of each presentation the pupil group (usually 3 pupils) consults for a short period then provides feedback. The feedback consists of general comments on content and style, identification of good points, recommendations for improvement, and a formal thank-you.

Course evaluation questionnaires: A form is used requesting views on agreement with a number of statements about learning and the opportunity for any commentary about the programme

Applications for follow-up activity funds: Participants can make a competitive application for small grants (£1500 x 3 in 2008) to support a new activity for delivery during the University's National Science and Engineering Week (NSEW) programme. The number and quality of applications for funding for follow up activity is seen as an evaluation measure of the programme. Applications are reviewed by a panel of outreach and public engagement specialists. Funded applications are selected on basis of evidence of learning, viability, and sustainability.

Evidence of long-term change: A further evaluation measure is the involvement of course participants in other FESM outreach and public engagement initiatives

What were the key 'impacts' on participants?

- Above all else, seeing and believing that one's research is interesting beyond one's research peer group if presented in an accessible way
- Participants from 2007/08 are now leading on a 'murder mystery'/solve-it science quest for 2009 and the 'Oceans On Wheels' deep ocean science roadshow that will tour in 2009/10
- The value of a 'practice' in front of a typical audience – feedback from the 'horse's mouth' as one participant puts it
- Understanding (through experience) the potential for a constructive dialogue between researchers and 'the public'
- For those who have never been in a UK school, the youth and community workshop is especially useful
- Seeing and/or doing examples of best practice (eg at the last iteration, a colleague from physics ran a holography outreach session with the school pupils AND the course participants)
- Being able to meet a group of school pupils and to reconsider expectations, fears and anxieties – participants sometimes note that the pupils are 'too well-behaved' but our view is that they are not untypical of local schools in general when presented with enthusiastic science delivered by outsiders
- Becoming part of the network of researchers and specialists in public engagement within the University
- Understanding the potential of partnerships with organisations beyond the University

Evaluation evidence related to the 'Rugby Team Impact Framework'

Level 1: Reaction

- Participants provided positive reactions to the programme as above
- External consultants note that course 'is a well put-together package'

Level 2: Learning

- Again see above

Level 3: Behaviour

- From 48 participants in 2007/08 12 applications for NSEW funding have been received. These 12 applications involved 28 of the original participants plus a further 19 individuals were named as part of the proposed delivery team. The three funded projects delivered novel outreach activities to 2000+ visitors to NSEW at the University in March 2008. Two of the project teams are now involved with the 'Oceans on Wheels' roadshow. The third project team has initiated an outreach training scheme within their own School.
- A small number of the unfunded NSEW applicants have developed other funded outreach projects within the University.
- In some fields, connections have been made with FESM undergraduate societies (e.g. robotics) so that post- and under-grad outreach is more co-ordinated
- Informal reports from colleagues indicate that outreach and public engagement specialists are increasingly well-supported by post-grads and post-docs in their departmental initiatives.

Level 4: Outcomes

- Measurable outcomes include the 2 new outreach initiatives for 2009/10
- We are attempting to monitor participant involvement with Public Engagement funding applications, eg RAEng Ingenious, EPSRC PPE etc.

Appendix II - Case studies of planned evaluations mapped against the Rugby Team Impact Framework.

Case Study 3: University of Leeds Evaluation Projects

Faculty of Engineering: Patricia Gray

1 How do postgraduate students rate their own skills and why?

A longitudinal survey 2008-2012 of postgraduate students in the Faculty of Engineering, tracking students who have registered between 1st November 2008 and 31st October 2009. Researchers are being asked to take part in a voluntary study to evaluate their own perceptions about their personal and professional development throughout the course of their PhD.

The purpose of this research is to:

- track researchers' perceptions of their skills and how these change over time
- explore factors that researchers believe have contributed to personal and professional development
- explore factors that researchers believe may have hindered personal and professional development
- explore any impact researchers think their skills development might have had on their research performance, their personal confidence, their workplace performance and their career aspirations
- explore researchers' views about the training and development opportunities offered to them by their supervisor, their research group, their school, the Faculty of Engineering's training service, the University of Leeds' Staff and Departmental Development Unit (SDDU) and other University training services
- use the findings to evaluate the impact of current relationships and services that support the training and development of researchers and improve these where needed.

2 Dissertation for the Masters in Science Communication (Patricia Gray)

The purpose of this research is to consider the role and impact of skills training in promoting and developing researcher public engagement.

3 Postgraduate Student Exit Survey: An ongoing survey of every research student when they reach 36 months. Jointly initiated with the Graduate School and Faculty Marketing Department. On-stream Easter 09.

The purpose of this research is to explore views about the value of training and development provision and the quality of the researcher's experience during the PhD in order to review and improve Graduate School Services.

4 Postdoctoral Staff Exit Survey: An ongoing survey of every member of research staff on exit. An existing Faculty HR survey is being reworked to include training and development issues.

The purpose of this research is to: explore views about the value of training and development provision and the quality of the researcher's experience of training and development during the period of employment, in order to review and improve training and development services to them.

5 Survey of Supervisors to assess evidence for the impact of training in Engineering.

In development for 2009. The purpose of this research is to: explore evidence of any student attitude and behaviour change since the inception of the Skills Training Programme in the Faculty of Engineering, in 2006. By comparing drop out rates, transfer success, publications and presentations, completion rates, etc, and by probing supervisors views as to causal factors.

Information Systems Services: Paula Fallon

Evaluation of NVivo (qualitative analysis software) training, for postgraduate research students and research staff, to understand the value of the training to researchers and the University of Leeds. The study will focus on reviewing the learning outcomes and measuring the perceived benefits of incorporating the software in participants research.

Project plan & Method: Delegates will be asked to complete a number of questionnaires, evaluation forms and some will be randomly selected to take part in semi structured interviews/discussions.

Staff and Departmental Development Unit : Katharine Griffiths, Tony Bromley

Evaluating the impact of 'Speed Reading Workshops' on research student participants. The project will follow the methodology of the 'Rugby Team Impact Framework' particularly focusing on the learning taking place during the workshop and the subsequent application of learning and resultant outcomes in relation to research. The project will cover each impact level in the RTIF.

Staff and Departmental Development Unit : Odette Dewhurst

Evaluating the impact of grant writing provision for researchers, focussing on level 4 outcomes.

Case Study 4: Impact Evaluation Framework: Postdoctoral Researchers Continued Professional Development Programme, Lucy Lee, School of Medicine and Biomedical Sciences, University of Sheffield

1. Whole Programme Evaluation

Stage 1: Baseline Study

In order to create an effective impact evaluation framework for the new postdoctoral research CPD programme, before any training or career activities began we carried out a study to identify the level of the following:

- perception of skills – based on the Joint Skills Statement
- demographics including previous positions held
- research achievements to date (publications, grant applications, awards, conferences etc)
- perception of the department (motivations, community etc)
- level of support currently available including induction, training, research and career development
- aspirations.

Without this information it would be difficult to assess if the new programme and any changes made an impact to the School as a whole or on an individual level.

Stage 2: Induction Programme

It was highlighted that there was an insufficient induction for postdocs joining the School. An induction programme was created that involves an initial peer mentoring or “buddy” system, information induction pack, training needs assessment and induction questionnaire, linked to the baseline questionnaire for individual and School monitoring and perception change tracking.

Stage 3: Exit Questionnaires

An online exit questionnaire was developed which is highlighted to postdocs at the end of their contract. It is directly linked to the baseline questionnaire and asked people to reflect on all aspects that were covering in the baseline questionnaire. This will allow us to monitor the impact of the programme on particular individuals across the duration of their contract.

Stage 4: Measuring Change

(i) Bi-Annual monitoring

After 2 years of the programme (in March 2009) we propose to repeat the baseline questionnaire and compare the results in order to see the changes that have been made to the School and to randomly selected individuals when compared to the results of the baseline survey. There will also be an element of focus groups and interviews/discussions.

(ii) Metrics and Case Studies

Change will also be monitored using comparisons between numbers of external grants and fellowships applied for and awarded as sole or co-applicant, publication records, awards, training engagement levels and CPD activity uptake (eg numbers of postdocs now carrying out public communication activities). Case studies on individuals exposure to and impact from the training programme will be reported on.

Monitoring across the programme allows us to review and improve the level of training and career development opportunities we deliver to the early career researchers. This aims to eventually deliver activities that allow the programme to cover all the skills that are highlighted in the Joint Skills Statement.

2. Specific Activity Evaluation

Activities like workshops, seminars and career days within the programme are also evaluated on an individual basis. This process includes the following:

Stage 1: Needs analysis, expectation identification, design and outcome determination.

Initially when a training opportunity is highlighted, a working group of postdocs and academics is brought together to identify what is needed, how it will be best delivered, what is expected of the session and what outcomes can be measured from it. In this way we have developed a programme designed by the postdocs specifically for the postdocs. The programme is not solely a series of stand alone workshops but sessions that lead into additional activities and outcomes that can be monitored in order to strengthen the learning by putting the taught theory into practice.

Stage 2: Reaction

On the day questionnaires are used to assess the initial feedback on the design, delivery and content of the session.

Stage 3: Learning Evaluation

After 3 to 6 months a survey is sent to those who attended the session to specifically identify if they have made any changes as a direct result of the session and to highlight any additional outcomes or achievements.

Stage 4: Outcome Assessment

Outcomes and activities based on the sessions are continuously monitored to allow for additions, modifications and development. This includes the outreach group involved in communicating science to the public, the writing club who have successes in improving each others publication records, involvement in undergraduate teaching, feedback and marking, success with the BiotechnologyYes competition etc.

Stage 5: Redesign and Development

The results of Stage 2- 4 are compiled and used to make modifications to the design and delivery of every session in order to further meet the needs of the target audience. This is relayed back to the speaker or host of the session who works with us and the other stakeholders to develop the course.