![Vitae logo: realising the potential of researchers] | **Researcher Development Framework**

The Vitae Researcher Development Framework and Researcher Development Statement: methodology and validation report

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**RESEARCHER
DEVELOPMENT
FRAMEWORK**

Abstract

Aims

This report describes the development process, design, refinement and validation of a development framework for researchers. The framework identifies the characteristics of excellent researchers across the full spectrum of researcher careers. The purpose of the framework is to support the development of individual researchers while enhancing our capacity to build a workforce of world-class researchers within the UK higher education research base.

Design and methods

Within an iterative, interpretive design, the methods used in the project were: semi-structured interviews with researchers, focus groups, literature reviews, sector wide consultations, specialist reviews and advice, expert panel review, validation and feedback. The interview data was analysed using a phenomenographic approach.

Results

The tangible results were the Vitae Researcher Development Framework (RDF) and Vitae Researcher Development Statement (RDS).
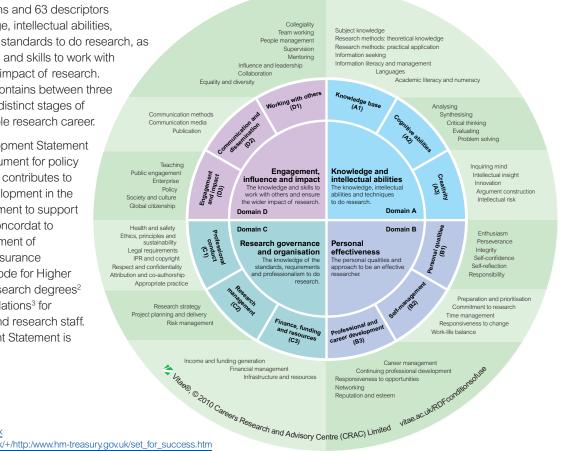
The Vitae Researcher Development Framework consists of four domains, 12 sub-domains and 63 descriptors encompassing the knowledge, intellectual abilities, techniques and professional standards to do research, as well as the personal qualities and skills to work with others and ensure the wider impact of research. Each of the 63 descriptors contains between three to five phases, representing distinct stages of development across the whole research career.

The Vitae Researcher Development Statement is a summary reference document for policy and strategy development. It contributes to researcher training and development in the UK by providing a vital statement to support the implementation of the Concordat to Support the Career Development of Researchers[1], the Quality Assurance Agency (QAA) UK Quality Code for Higher Education, Chapter B11: Research degrees[2] and the Roberts recommendations[3] for postgraduate researchers and research staff. The Researcher Development Statement is endorsed by over 30 key organisations[4] and replaces the Research Councils' Joint Skills Statement (JSS)[5] as the key reference statement for the development of postgraduate researchers' skills and attributes and for researchers employed in higher education.

Conclusions

This project has established a comprehensive development framework that is flexible and is relevant for the range of researchers in higher education. The framework is grounded in research being based on interviews and focus groups with over 100 researchers and additional advice from specialists and stakeholders; it was validated by an external independent advisory group of expert, established researchers. The resulting framework captures the knowledge, behaviours, personal qualities and attributes that the higher education sector, overall, has identified as significant for researchers; while the core of the framework has been determined and defined by the research profession. The Vitae Researcher Development Framework has been designed to be used by individual researchers and the people who support them. The Vitae Researcher Development Statement is the strategic reference statement for policy makers and institutions.

[1] www.researchconcordat.ac.uk/
[2] www.qaa.ac.uk/Pages/default.aspx
[3] webarchive.nationalarchives.gov.uk/+/http:/www.hm-treasury.gov.uk/set_for_success.htm
[4] www.vitae.ac.uk/researchers/278641/RDS-endorsements.html
[5] www.vitae.ac.uk/jss

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Researcher Development Framework

1. Overview

Researchers make an important contribution to the UK economy, both in sustaining our research base and as leaders in the workforce. This document reports on the development and validation of the Vitae Researcher Development Framework (RDF) which underpins a major new approach to developing world-class researchers.

The framework has been developed by and for researchers working in higher education as an aid to planning, promoting and enhancing professional and career development. It articulates the knowledge, behaviours and attributes of successful researchers and encourages all researchers to realise their potential.

The associated Vitae Researcher Development Statement (RDS), endorsed by the UK higher education funding bodies, Research Councils UK, Universities UK and other UK organisations, provides a policy reference for researcher development strategies. Together with the Vitae Researcher Development Framework it supports the implementation of policy related to researchers' professional development in the UK.

2. Context and rationale for the development of a framework

The importance of developing highly-skilled researchers and promoting the value of research careers to build research capacity and ensure economic and cultural prosperity has been well-recognised.[6] The 2005 launch of the European Charter for Researchers and Code of Conduct for the recruitment of researchers[7], and the revision of the UK Concordat to Support the Career Development of Researchers[8] in 2008, are evidence of a growing requirement in the UK and Europe to establish the career of 'researcher' as a valued profession.

Implicit in the researcher development agenda is an understanding of the skills that researchers need to develop. For postgraduate researchers this was articulated in the 2001 Joint Skills Statement (JSS)[9] developed by the UK GRAD Programme (now Vitae) and the Research Councils. For research staff there was no UK equivalent statement. The only UK reference was the Joint Negotiating Committee for Higher Education Staff (JNCHES) academic role profiles for research

roles[10], but this focused on job descriptions rather than personal and professional skills development.

The 2006 scoping study for Research Councils UK (RCUK), for a research career mapping tool to enable researchers to access key information, advice and guidance about research careers, identified the potential importance of a general UK framework for researchers and research careers.

The Research Career Mapping Tool Report[11], 2006, noted:

"A fundamental issue that has repeatedly emerged throughout this project is the lack of clarity about what constitutes a research job/career, and about the defining characteristics of a 'researcher'. There is no overarching 'framework' on which to contextualise the mapping of research careers."

The need for a framework for research careers had also been recognised at the 2005 UK Presidency conference launching the European Charter for Researchers and the Code of Conduct for their Recruitment[12]. The outputs from the conference stressed the need for 'substantial cultural change in the way researchers are perceived, managed and conduct themselves. The recognition of research as a profession – with researchers recognised, as well as recognising themselves, as professionals – is a key aspect of this change in perspective'.

A proposal by the 2008 Vitae Roberts Policy Forum[13], subsequently endorsed by a working group called the Rugby Team[14] (now the Impact and Evaluation Group – IEG), emphasised the importance of developing an overarching competency framework/model of professional learning that built on the Joint Skills Statement. Whilst the Joint Skills Statement was recognised as a valuable initial guide to setting out the skills that doctoral researchers would be expected to develop during their research training it was accepted that there was a need to extend researcher development beyond the doctoral experience to cover the full range of the research career.

In March 2009 Vitae began the management and funding of the development of a framework for researchers, in collaboration with the higher education sector and other stakeholders. This paper provides details of the design, process and refinement of the research that led to the generation of the Vitae Researcher Development Framework (RDF) and the associated Vitae Researcher Development Statement (RDS).

[6] www.rcuk.ac.uk/documents/researchcareers/RobertReport2011.pdf

[7] www.ec.europa.eu/eracareers/pdf/am509774CEE_EN_E4.pdf

[8] www.researchconcordat.ac.uk/documents/concordat.pdf

[9] www.vitae.ac.uk/jss

[10] www.ucea.ac.uk/objects_store/JNCHES_Academic_Role_Profiles_and_Guidance.pdf

[11] 'Research Career Mapping Tool Report', CRAC, 2006, page 7 www.vitae.ac.uk/CMS/files/upload/RCMT-project-report-March-2006.pdf

[12] 'The European Charter for Researchers and the Code of Conduct for their Recruitment – Report of proceedings', UK Research Office, 2005, page 3, www.vitae.ac.uk/cms/files/UK-GRAD-European-conference-report-September-2005.pdf

[13] The annual Vitae Policy Forum is an event which engages invited representatives from UK higher education institutions in debate about policy issues in researcher development. www.vitae.ac.uk/CMS/files/upload/UK-GRAD-policy-forum-report-january-2008.pdf

[14] The Rugby Team (now known as the Impact and Evaluation Group (IEG) is a sector-led working group, drawn from a range 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', www.vitae.ac.uk/ieg

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3. Advisory group and project group: guiding principles

An advisory group and project group was established in March 2009 to further the aim of developing a framework for researchers. The project group included members from the Impact and Evaluation Group and other key stakeholders, along with representatives from the sector. An advisory group chaired by Professor April McMahon, University of Edinburgh, was established to represent key organisations with an interest in researcher development.

The guiding principles for the project are included in Appendix 1. A membership list for the Advisory Group, Project Group, Clustering and Gap Analysis Working Group, and the Interview Group are included in Appendix 2.

3.1 Project aims

The Vitae Researcher Development Framework was designed for planning, promoting and supporting the personal, professional and career development of researchers in higher education. It would articulate the knowledge, behaviours and attributes of successful researchers and encourage them to realise their potential.

The framework would serve:

- researchers – to evaluate and plan their professional development
- principal investigators and supervisors of researchers – in their role supporting the development of researchers
- researcher developers, trainers, human resources specialists, careers advisors, senior managers and others – in planning and providing support to researchers
- policy makers, funders and other organisations – to inform and reinforce policy and strategy relating to researchers
- employers – to provide insight into the unique blend of researchers' skills and to enable exploration of researchers' potential benefits to the company as employees.

3.2 Project scope

The scope for the framework development was to:

- present the generic descriptors common to researchers in higher education
- seek to describe characteristics of anyone conducting research in UK higher education
- contain other activities related to research that may or may not be undertaken by individual researchers within higher education
- recognise it is likely that as researchers progress through their careers they will conduct research as part of a portfolio of responsibilities in which research may or may not be the main activity

- use the language of researchers
- be aspirational, yet realistic: identifying both the descriptors of good researchers and how to progress to the next phase within individual descriptors
- make no judgement about the career choices researchers make, but instead encourage researchers to strive for excellence thereby improving their potential to achieve their career aspirations regardless of what these might be
- acknowledge that all researchers will be at different positions in terms of their current development, activities and aspirations so may be selective in how and why they use it
- attempt to anticipate how the research environment may change over the next ten years through to 2020
- avoid any link to performance appraisal, national or local role profiles, job evaluation exercises or academic promotion procedures.

4. Design and methods

The design employed an interpretive method, based on a phenomenographic approach, using semi-structured interviews and focus groups to collect the main data. The analysis of the data was informed by a literature review and involved the clustering of data under categories derived from the data.

4.1 Phenomenographic approach

The guiding philosophy for the project was that the framework be developed through a process of community consensus. The detail of the framework should derive from researchers and be agreed as relevant and appropriate by them and other key stakeholders involved in research in higher education. See membership lists in Appendix 2.

Thus a phenomenographic approach, associated with education research with notable exponents, including Ference Marton and Gerlese Åkerlind[15], was adopted. This approach is premised on the assumption that an individual will only partially experience or notice a phenomenon and cannot 'know' the whole picture. By capturing and gathering a range of (partial) viewpoints a fuller, collective, picture of the phenomenon under investigation can be obtained. Therefore, no single researcher could 'know' all of the qualities required for being a researcher with respect to every kind or type of researcher, let alone those in each discipline. However, it was proposed that, if a broad spectrum of researchers' views were captured, it would be possible to identify the significant details and important characteristics that may apply to any researcher. It is an essential requirement of the method that both similarities and differences are identified in interview data. In this way, variation in understanding among the interviewees and their perception of what is significant to the phenomenon (of being a researcher) can be synthesised.

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[15] Åkerlind, G. (2005). 'Variation and commonality in phenomenographic research methods'. Higher Education Research & Development, 24(4), 321-334.

This is an interpretive method in which the framework rests firmly on what researchers, in the first instance, recognise as significant about themselves and later confirm as representing recognisable perspectives on themselves as researchers during the validation process. As will be demonstrated, the robustness and applicability of the resulting framework owes much to the wide variety of contributing perspectives and to the iterative cycles of revision-checking-consultation engaged with by the core group over the two year period of its development.

4.2 Semi-structured interviews and focus groups

Several sets of interview data were used for the project. Initially the data from two independent research projects were combined, reviewed and added to with further semi-structured interviews and focus groups.

In 2008 the two independent research projects were conducted by Glasgow Caledonian University[16] and the Faculty of Humanities at the University of Manchester[17]. The projects shared the similar purpose of seeking to identify the qualities required of researchers in higher education. A unique feature of the research conducted by Glasgow Caledonian University was that it had focused on leadership qualities and the attributes likely to be required of researchers in the future. The special value of the Manchester project was that it had used a repertory grid system asking research leaders to identify the qualities associated with outstanding and under-performing researchers and/or academics, providing in-depth understanding of the qualities using the power of contrast. Both projects employed a semi-structured interview technique. In spite of slight variations in purpose and approach behind each project, both sets of interview data yielded very similar results in terms of the researcher qualities and attributes they identified.

The datasets from these two projects were brought together by the Clustering and Gap Analysis Working Group convened by Vitae in June 2009. An initial analysis revealed some gaps in terms of disciplinary and demographic coverage. These areas were identified and a new interview structure (see Appendix 3) was constructed for Vitae that combined questions from the Glasgow Caledonian University and University of Manchester projects. Subsequent interviews of targeted senior researchers from the University of Reading, the University of Southampton and the University of Surrey were conducted by the Interview Group who analysed the data to bridge the gaps in coverage.

The primary data set was further added to by using two focus groups of, approximately, 25 participants providing a final total of over 150 contributors. The focus groups suggested the main attributes required of researchers at different stages of their career.

The final data set informed the fundamental structure and the majority of the content of the Vitae Researcher Development Framework.

4.3 Analysis

An analysis of the full interview data identified similarities and differences and noted any obviously omitted or 'un-noticed' topics/areas. So, for example, respondents frequently mentioned the ability to analyse data as an important feature of being a researcher, therefore this was noted as a characteristic; but where respondents recognised, also, the significance of analysing 'datasets other than one's own', this was categorised as a variation. The analysis resulted in over 1,000 characteristics and their variants being identified.

4.4 Clustering

Through an iterative testing phase, the characteristics were clustered by the Clustering and Gap Analysis Working Group into relevant categories according to type. It is important to note that the vast majority of the clustering and the categories within each cluster area had been determined by what the profession counted as significant. This predominately centred on the areas of: personal effectiveness, subject knowledge, scholarly abilities and research approaches/methods/techniques. Initially nine cluster groupings were established which were later refined to eight and then finally to four clusters or 'domains' as they came to be called, to make them appropriately accessible to users. Again by repeated, iterative analysis, information within each domain was further refined into sub-domains (12 in total – three per domain) and each sub-domain was refined into descriptors (63 in total) following feedback from the sector.

To differentiate stages of development the descriptors were initially arrayed across five phases of career development from entry level to the most senior level. Working across the five phases, descriptors from the data were positioned under the most relevant phase and additional descriptors elaborated from the original data, secondary data and the input of experts from the various groups and teams involved. Each of the 63 descriptors contained between three to five phases of development, representing distinct stages within that specific descriptor. Thus the resulting phases of individual descriptor development were not necessarily coincident with the stages of researcher career development. For instance, a person in the very early stages of their career may have already developed some particular skills/attributes (such as ability to persevere) to a high level whereas an established researcher may never have needed or had the opportunity to develop some skills/attributes (such as technical IT skills). This gave the framework a range of flexibility as well as depth of content to take account of disciplinary, professional and personal variation.

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[16] 'The Glasgow Caledonian University Researcher Skills Map Project', 2008, Professor Bonnie Steves and Calum Webster, Glasgow Caledonian University www.vitae.ac.uk/researchers/430901-167261/Glasgow-Caledonian-Researcher-Skills-Map-Project-Oct2008.html and 'Glasgow Caledonian University generic leadership framework', 2007, Webster, Glasgow Caledonian University www.vitae.ac.uk/researchers/430901-167251/Glasgow-Caledonian-University-Leadership-Development-Centre-Workbook.html

[17] The 'Academic competencies project', 2008, Dr Maria Nedeva, University of Manchester and Dr Julie Reeves, (now) University of Southampton

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4.5 Literature and expert reviews

Two literature reviews were undertaken which surveyed a large number of competency frameworks and skills lists from both the education and corporate sectors. The first literature survey[18] identified existing relevant skills, attributes and competencies based on definitions of research and the role of researchers. The second survey[19] explored existing competency frameworks and their development, looking at both the academic literature and relevant example frameworks for researchers, related occupations and for the corporate/commercial sector. These frameworks and lists (including those well known in institutions, such as the Joint Skills Statement[20], Irish Universities Association's PhD graduate skills[21], JNCHES role profiles[22] and University and College Union (UCU) promotion criteria for academic and related staff[23]) were examined for key similarities and differences in comparison with the embryonic Vitae Researcher Development Framework. All the primary data characteristics, or 'descriptors' as they came to be labelled, were cross-referenced with secondary data from the literature reviews.

In addition, expert advice was sought on a number of areas in the framework to provide a more complete picture of the skills that need to be developed by researchers, particularly looking into the future. These included areas such as: information management, career management, enterprise and entrepreneurship, teaching, public engagement and policy (see Appendix 2). This process refined the structure and content, however, it did not fundamentally change the nascent framework, which was then prepared by the Advisory Group and Project Group for wider consultation within the sector.

5. Consultation and validation

5.1 Sector consultation

A major consultation with the higher education sector, researchers and other stakeholders took place at the end of 2009 to review the draft framework. This was conducted via two online surveys, several focus groups and through direct email responses. A total of 242 responses were received to the consultation. There were 151 responses to a general survey, 72 researchers responded to a separate researcher survey and there were 19 email responses. In total, 87 responses were on behalf of organisations (65 HEIs) and 74 were from individuals working in institutions or related

organisations (Appendix 4). To ensure that the Vitae Researcher Development Framework had resonance with employers in a range of employment sectors, a follow up consultation took place with a number of employers.

Analysis of the consultation responses was conducted by the Clustering and Gap Analysis Working Group in spring 2010 and the report of the consultation published[24] in May 2010. Overall between 60% and 80% of respondents to all questions agreed or mostly agreed that the framework's proposed purpose, scope and structure were useful. There was strong support that it would be valuable for supporting the professional development of researchers. It was thought to have wide relevance and applicability, and the empirical basis was particularly beneficial in providing a credible, robust framework with a sound structure.

One of the predominant concerns in the consultation feedback was about the clarity of the messages around the purpose of the framework, particularly the importance of providing a clear rationale to different stakeholder groups on its value and uses. To address this concern it was agreed to develop a series of briefings[25] on the Vitae Researcher Development Framework for various stakeholder groups.

Another predominant concern was how the framework related to stages of career development. The consultation version of the framework had loosely linked the phases of the framework to various stages of researchers' careers from new researcher to eminent researcher. The main concern was that this link could imply that progressing through the phases of development for all the descriptors would ensure promotion (see also Section 4.4). This would not sufficiently recognise that opportunities for progression in academia are hugely competitive and subject to many external factors, often out of the control of the individual. The Project Group and Advisory Group decided that this linking added an unnecessary level of complexity and the potential for misunderstanding the primary purpose of the Vitae Researcher Development Framework, which was to support researchers to improve their practice.

A further concern was expressed about the size and intricacy of the framework, although it was recognised that it captured the complexity of the research role and the wide range of skills required. It was felt that a summary statement would be useful to inform those not necessarily engaging with the framework as a self-development tool. Subsequently the Vitae Researcher Development Statement was devised, summarising the main body of the descriptors, to fulfil this purpose (see Section 6).

[18] 'Initial survey of the literature relating to the skills, competences and attributes of researchers', Dr Anne Lee, University of Surrey, 2009 www.vitae.ac.uk/rdfconsultation

[19] 'Review of literature relating to competency frameworks for researchers', 2009, Shaharazad Abuel-Ealeh, CRAC, www.vitae.ac.uk/rdfconsultation

[20] www.vitae.ac.uk/jss

[21] www.iua.ie/publications/documents/publications/2008/Graduate_Skills_Statement.pdf

[22] www.ucea.ac.uk/objects_store/JNCHES_Academic_Role_Profiles_and_Guidance.pdf

[23] www.ucu.org.uk/index.cfm?articleid=1969#contribution

[24] 'Researcher Development Framework: Summary of the analysis of consultation responses', Vitae.
www.vitae.ac.uk/researchers/430901-250251/RDF-Consultation-analysis.html

[25] www.vitae.ac.uk/rdfresources

In response to the consultation feedback the Project Group sought further expert advice, particularly through the Advisory Group, related to the areas of information management, career management, enterprise and entrepreneurship, and public engagement. Greater specialist input generated the need for a sense of progression or more appropriately, aspiration, to be built into the framework in a more consistent and deliberate manner. To assist with this further refinement of the framework, a 'palette of terms' (Appendix 5) was produced to ensure consistency of the language and terms used throughout the framework. These changes enabled the link to career stages to be removed.

A revised version of the framework was published in September 2010. September 2010 to January 2011 was designated a 'period of reflection', allowing space for further comments and feedback from the sector, individual researchers and stakeholders. Over 300 comments and suggestions were carefully considered by the Clustering and Gap Analysis Working Group, of which 174 were closely addressed to finally refine the content of the framework. Notable positive responses included many that suggested that the framework provided a rich, flexible, accessible and portable tool for researchers, while responses widely acknowledged it as practical and beneficial.

5.2 Expert panel validation

As a final stage to the phenomenographic approach to developing the framework, a validation process was conducted by the Interview Group to confirm that the framework represented what researchers recognised as significant about themselves. The validation procedure consisted of the engagement of an expert panel of 15 senior academics working across a spread of disciplines, institution types and geographical location. There were five representatives from each of: biological and biomedical sciences; science, technology, engineering and mathematical (STEM) subjects; and arts, humanities and social sciences. Within these broad discipline groupings, one member reviewed the full framework; the remaining four were given a specific domain each to review in depth. Each member was asked to address the following topics which were explored in depth during the subsequent interview process (Appendix 5):

- general relevance
- structure
- consistency and balance
- language
- progression
- inclusion and exclusion
- personal relevance.

The validation responses were extremely positive, with only minor changes suggested. The language was deemed as that commonly used in the academy and was professionally appropriate. The structure and titles of the domains and sub-domains were apposite, reflecting the content, while the use and balance of domains and sub domains made logical sense. Some confusion was noted about the use of columns in the framework to represent phases of development. However, most importantly, the panel recognised their own development pathways and those of colleagues embedded in the framework and, indeed, could identify areas in which they could continue to develop. They also commended the framework as likely to support the development of researchers for the future and looked forward to using it as a professional development tool for themselves and others.

The results of the validation panel were integrated into a revised version of the framework along with input from the Equality Challenge Unit to incorporate relevant changes to language to aid accessibility and reflect on the Equality Act 2010. The visual presentation of the full framework took account of feedback by designing it without columns and incorporating a circular diagram to emphasise the non-hierarchical nature of the domains and sub-domains.

6. The launch of the Vitae Researcher Development Statement and Vitae Researcher Development Framework

Following the sector consultation and refinements to the Vitae Researcher Development Framework content, the Vitae Researcher Development Statement was created as a strategic reference document for policy and strategy development. Launched in July 2010 and endorsed by over 30 key organisations[26], the Vitae Researcher Development Statement provided an evolution of the Joint Skills Statement (JSS)[27] and replaced the JSS as the key reference statement for the development of postgraduate researchers' skills and attributes and researchers employed in higher education. A two-way mapping of the Vitae Researcher Development Statement and the JSS was published[28] to support the transition from the JSS to its successor. The Statement summarises the 63 descriptors in terms of 'knowledge', 'behaviours' and 'attitudes'.

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[26] www.vitae.ac.uk/researchers/278641/RDS-endorsements.html
[27] www.vitae.ac.uk/jss
[28] www.vitae.ac.uk/policy-practice/1393-272741/Comparison-of-the-Researcher-Development-Statement-and-the-Joint-Skills-Statement.html

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The Vitae Researcher Development Statement contributes to researcher training and development in the UK by providing a strategic statement to support the implementation of the Concordat to Support the Career Development of Researchers[29], the Roberts recommendations[30] for postgraduate researchers and research staff, and has been incorporated into the Quality Assurance Agency (QAA) UK Quality Code for Higher Education, Chapter B11: Research degrees.[31]

"We are delighted to endorse the Researcher Development Statement. It is vital that we continue to support the career development of researchers to ensure that the impact they have on the economic and social wellbeing of the UK is truly felt. RCUK encourages research organisations to use the new Researcher Development Statement to underpin their professional development programmes for students."

Professor Rick Rylance, RCUK Champion for Research Careers

The final version of the full framework (the RDF) was launched[32] in April 2011. It has been adopted by UK HEIs, has been included in the Research Council supported Doctoral Training Centres/Partnerships and is attracting international interest.

Summary and future developments

The Vitae Researcher Development Framework project was a significant UK undertaking and has provided a major new approach to researcher development to enhance our capacity to build the UK workforce, develop world-class researchers and build the research base. It has been developed by and for researchers working in higher education as an aid to planning, promoting and enhancing professional and career development. The associated Vitae Researcher Development Statement, endorsed by the UK higher education funding bodies, Research Councils UK, Universities UK and other key organisations, provides a policy reference for researcher development strategies. Together with the full, operational framework it supports the implementation of policy related to researchers' professional development in the UK.

The framework has been grounded in research and is based on interviews and focus groups with experienced researchers and additional advice from specialists and stakeholders. It has been validated by an external independent advisory group of experts. This has resulted in a framework that captures the knowledge, behaviours, personal qualities and attributes the higher education sector has identified, overall, as significant for researchers, while the core of the framework has been determined and defined by the research profession.

To ensure that all users, researchers and institutions benefit from the rigorous approach that has led to the development of the Researcher Development Statement and Researcher Development Framework, some terms and conditions of use have been established. These can be accessed at www.vitae.ac.uk/rdfconditionsofuse. The aims of these terms and conditions are to:

- ensure all users benefit from the collaborative and rigorous approach to development by protecting the integrity of the RDS and RDF in their totality and the Associated Materials
- ensure that the RDF and the Associated Materials remain transferable so that researchers can use them throughout their development
- support the implementation of the RDF with a process that can enable the RDF to be adapted with Vitae permission to meet specific requirements
- protect the RDS and RDF from inappropriate use.

Vitae encourages UK higher education institutions to make use of the Researcher Development Statement and the Researcher Development Framework and will be continuing to develop materials to support researchers and institutions with using the framework.

Vitae is currently working in collaboration with a number of key organisations to develop a series of lenses on the Researcher Development Framework. The purpose of a lens on the Researcher Development Framework is to focus on the key knowledge, behaviours and attributes developed by researchers that can be used for, or acquired through, particular contexts, such as teaching, leadership, enterprise, information literacy or public engagement. Further details about lenses on the RDF can be found at www.vitae.ac.uk/rdflenses.

The RDF Advisory Group, Project Group and Vitae would like to thank all the individuals and organisations who provided their ideas, inputs and comments on shaping the development of the framework to ensure it meets the needs of the higher education sector, other stakeholder organisations and researchers themselves.

For further information about the Vitae Researcher Development Framework visit: www.vitae.ac.uk/rdf

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29 www.researchconcordat.ac.uk/
30 http://webarchive.nationalarchives.gov.uk/+/http:/www.hm-treasury.gov.uk/set_for_success.htm
31 www.qaa.ac.uk/Pages/default.aspx
32 www.vitae.ac.uk/researchers/430901-291181/Researcher-Development-Framework-RDF.html

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Researcher Development Framework

Appendix 1:
Guiding principles for the Vitae Researcher Development Framework

Purpose of the framework

The framework primarily will be of use for:

■ researchers within higher education to evaluate and plan their own personal professional and career development

■ trainers, developers and careers advisors in the planning and provision of support for researchers' development

■ managers/supervisors of researchers in their role supporting the development of researchers

■ institutions in making decisions about their strategic approach to development of researchers.

The framework will also be of use for:

■ non-higher education employers in identifying the benefits of employing researchers over non-researchers

■ people interested in training as a researcher or researchers looking to move into higher education from other sectors.

Scope of the framework

The framework presents the generic descriptors common to all researchers in higher education. Although it is based on the current research environment within UK higher education, it also attempts to anticipate how this may change over the next ten years through to 2020. It is expected that the framework may need to evolve in response to changes in the research environment and that relevant organisations and groups may wish to translate it into more discipline specific language and context as appropriate.

Although focused on research activities, the framework also recognises other activities that may or may not be undertaken by individual researchers within higher education beyond their research activity. The framework acknowledges that all researchers will be at different positions in terms of their current development, activities and aspirations so may be selective in how and why they use it.

The framework addresses different stages of being a researcher including:

■ training to be a researcher, specifically studying for a doctoral level qualification

■ being employed to do research in higher education

■ becoming an independent researcher or research leader in higher education.

The framework is designed for researchers in higher education, but recognises that researchers move in to and out of this sector at all stages.

Appendix 2:
Membership of the Vitae Researcher Development Framework Groups

Advisory Group

■ April McMahon, University Edinburgh (Chair)

■ Janet Bohrer, Quality Assurance Agency (QAA)

■ Frances Burstow/Julie McLaren, Economic and Social Research Council (ESRC)

■ Sophie Duncan, National Co-ordinating Centre for Public Engagement (NCCPE)

■ Marie Garnett, Lifelong Learning UK (LLUK)

■ Sheila Gupta, Universities Human Resources (UHR)

■ Lesly Huxley, Leadership Foundation for Higher Education (LFHE)

■ Clare Jones, Association of Graduate Careers Advisory Services (AGCAS)

■ Sue Law/Helen Thomas, Higher Education Academy (HEA)

■ Duncan Mann, Vitae (to Nov 2009)

■ Janet Metcalfe, Vitae, CROS/PIRLs Steering Group, Impact and Evaluation Group (IEG)

■ Thomas Papworth, Concordat Strategy Group, Universities UK

■ Jonathan Roberts ,Vitae (from Nov 2009)

■ Jane Thompson, University and College Union (UCU)

Project Group

- Rob Daley, Heriot-Watt University, Vitae Research Staff Development Advisory Group (ReSDAG), Impact and Evaluation Group (IEG)
- Terri Delahunty, Cardiff University, Vitae Hub Co-ordinator
- Pam Denicolo, University of Reading, UK Council for Graduate Education (UKCGE), Society for Research into Higher Education (SRHE), Impact and Evaluation Group (IEG)
- Emma Gillaspy, Vitae (from May 2010)
- Vivien Hodges, Vitae (from Jan 2011)
- Clare Jones, University of Nottingham, Association of Graduate Careers Advisory Services (AGCAS), Impact and Evaluation Group (IEG)
- Anne Lee, University of Surrey
- Duncan Mann, Vitae (to Nov 2009)
- Janet Metcalfe, Vitae, CROS/PIRLs Steering Group, Impact and Evaluation Group (IEG)
- Alison Mitchell, University of Strathclyde/Vitae
- Maria Neveda, University of Manchester
- Ellen Pearce, Vitae
- Imelda Race, University of East Anglia
- Kate Reading, Research Councils UK, Impact and Evaluation Group (IEG)
- Julie Reeves, University of Southampton, Society for Research into Higher Education (SRHE)
- Jonathan Roberts, Vitae (from Nov 2009)
- Bonnie Steves, Glasgow Caledonian University
- Callum Webster, Glasgow Caledonian University
- Sara Williams, University of Cardiff, Vitae Research Staff Development Advisory Group (ReSDAG)
- Andy Wilson, Loughborough University, Staff Development Forum (SDF), CROS/PIRLs Steering Group

Clustering and Gap Analysis Working Group

- Janet Metcalfe, Vitae, CROS/PIRLs Steering Group, Impact and Evaluation Group (IEG)
- Duncan Mann, Vitae (to Nov 2009)
- Jonathan Roberts, Vitae (from Nov 2009)
- Bonnie Steves, Glasgow Caledonian University (to spring 2010)
- Julie Reeves, University of Southampton, Society for Research into Higher Education (SRHE)
- Pam Denicolo, University of Reading, UK Council for Graduate Education (UKCGE), Society for Research into Higher Education (SRHE), Impact and Evaluation Group (IEG)
- Stephen Dorney, University of Southampton
- Elizabeth Wilkinson, University of Manchester

Interview Group

- Pam Denicolo, University of Reading, UK Council for Graduate Education (UKCGE), Society for Research into Higher Education (SRHE), Impact and Evaluation Group (IEG)
- Julie Reeves, University of Southampton, Society for Research into Higher Education (SRHE)
- Cindy Becker, Lisa Danqua and Maura O'Regan (Interviewers)
- Julie Balcombe, Marina Sims and Vincent Denicolo (Transcribers)

Appendix 3: Interview structure

Interview preparation questions

In preparation for this interview, please consider the following questions:

1 What would you expect, in terms of knowledge, skills and capabilities, from:

   a. the PhD/doctoral researcher
   b. the post-doctorate researcher
   c. the research leader?

2 What are the key skills required of researchers now?

3 What defines an outstanding researcher?

4 How do researchers demonstrate leadership?

5 The changing environment of the researcher: As you look to the future, what challenges will researchers face and what skills might become more important in the next five to ten years?

Appendix 4: Consultation responses

Main survey (151 total responses)

77 on behalf of groups or organisations

- 10 organisations [Association of Graduate Careers Advisory Services (AGCAS), British Council, British Educational Research Association (BERA), GuildHE, National Co-ordinating Centre for Public Engagement (NCCPE), NUS, Rolls Royce, Scottish Researcher Career Development Forum, Universities Scotland Research and Knowledge Exchange Committee (RKEC), University and College Union (UCU)]
- 2 international, including Eurodoc
- 1 research institute (Institute of Cancer Research, ICR)
- 63 HEIs (including duplicates ~5)
- 1 unknown

20 of 30 largest research active higher education institutes (HEIs) provided organisational responses; 55% Russell Group, 57% 1994 Group.

74 individuals:

- 20 research staff (RS) (17)/postgraduate researchers (PGR) (3)
- 18 unknown
- 3 international
- 1 company (QinetiQ/the Inter-Company Academic Relations Group, ICARG)
- 32 academics and staff supporting researchers

Overall 70% with responsibilities/interest in both PGR & RS; 13% PGR only, 17% RS only.

Non-proforma responses

19 responses:

- 10 organisations; [British Heart Foundation (BHF), Europe Unit, Equality Challenge Unit (ECU), Institute of Physics, Intrapreneurship project team, Research Information Network (RIN) (5 orgs), the Higher Education Academy (HEA), 1994 Group, European Commission, UK Council for Graduate Education (UKCGE)]
- 9 HEIs (including 2 duplicates)
- 2 Vitae Hub collaborative responses (16 HEIs)

Researcher survey

72 total responses:

- 18 PGR (9 in first year of PhD), including a group response from 6 PGR
- 38 RS, including 2 group responses of more than 10 RS
- 12 research & teaching
- 2 teaching only
- 2 unknowns

38 HEIs represented.

Disciplinary split:

10% arts and humanities (A&H)

23% biomedical

10% biological

35% physical sciences and engineering (PS&E)

22% social sciences (SS)

Additional feedback from 10 non HE employers.

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Appendix 5: Palette of terms

Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
Knowledge, knows Basic understanding Working towards Skilfully competent in basics Competent Basic principles and processes	Detailed knowledge Detailed/robust understanding Develops further Deeper and consistent Recognises significances and importance	Thorough knowledge Thorough understanding Highly developed Readily produces Confident Expert	Stimulates new knowledge/ understanding Makes connections Understands implications Creates new	Outstanding breakthroughs Takes multi-perspectives Understands whole
Growing knowledge of own and immediate/ adjacent disciplines Opportunities to encounter other disciplines	Familiar with own discipline Spots opportunities in other areas Encouraged to engage in inter-disciplinary work/collaborative working	Familiar with range of disciplines Identifies new trends Developing reputation in other disciplines and non-academic domains	Leading voice in own discipline – recognised in other disciplines Known advocate in non-academic world	Renowned in range of disciplines and in non-academic world
Ability to recognise, validate, summarise, manage, take responsibility for – OWN work	Ability... for self and less experienced researchers, wider environment	For team/department	For department/institution and discipline (nationally - internationally)	Globally
Needs guidance, advice, direction	Sets example Supports, encourages, motivates, challenges others Welcomes and actively seeks out guidance May co-supervise PGRs and advise PGTs	Acts as role model Educates, guides, advises, directs, trains Supervises PGRs	Sets expectations Builds capacity Responds decisively Determines outputs Determines conduct	Exemplar - inspires, encourages, coaches, reassures
Being made aware of impact of research to the economic, social and environmental well-being of individuals and nation Exposed to international dimensions of research	Developing awareness of and ways of enhancing knowledge economy Engaging in activities that impact on society, welfare, cohesion, security and/or environment Engaging in international aspects of research	Contributing to health of disciplines and global advance Actively seeking international dimensions (networks, funding, collaborations, dissemination)	Delivering highly skilled researchers for academic and non-academic professions. Contributing to evidence based policy making and enhancing the work of practitioners Actively building international dimensions	High impact on business/government/ practitioners/R&D/ the economy International renown
Isolates, adapts, absorbs, appropriates, applies, creates, responds, tests (own work – with help)	Establishing - demonstrates, appreciates, identifies, improves, clarifies, agrees, initiates, designs, implements, attuned, sustains, formulates, flexible, initiates, rigorous, accurate, delivers, adapts, balances risk, independent, contributes to, acts	Establishes - combines and justifies, explores, champions, impartial, facilitates, co-ordinates, delegates, flexible, prioritises, organises, balances, monitors, measures, evaluates, manages, acts, explains, ensures, empowers	Established - drives, directs, anticipates, shares, creates, innovates, contributes, assesses, reviews, defends self and department, quality assures, tailors, manages, persuasive, nurtures	Influences, consults, defines, shapes, determines, challenges, visionary, authoritative

Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
Persists, growing personal resilience	Perseveres, self-reliant	Resilient - builds support structures for self Coaches others Realises potential	Independent - maintains support structures, builds for others Advises all staff	Exploits for dept. discipline, others and self
Adheres to Appreciates need for Acts on agreed Produces some Makes best use of	Engages with Evaluates own Pro-actively seeks external Understands context Produces (high standard) for Conducts advanced Recognises importance of	Identifies new Aligns programmes with Aware of Sets out clear Produces regularly	Communicates key Aligns department/ discipline with Accepts responsibility Produces selectively Finely honed work, rapidly	Drives change Sets policy Invited/solicited
Willingness, enthusiasm, motivated, engages Effectively manages self Takes responsibility for self	Committed Motivates, delegates Responsible for self and others Developing strategic view	Passionate Praises, supports, purposeful Takes strategic view	Determined (ambitious/driven?) Leads Shaping strategy	Inspirational Legacy Figurehead
Growing awareness of own abilities Shows consideration for others Mindful of impact of own behaviour and work	Learning additional skills – strives for excellence	Confident of own skills – actively seeks continuous (individual – for self and others?) improvement	Comfortable with skills Actively encourages improving culture	
Supports peers and students Respectful, sensitive to others	Developing management skills – training in leadership issues Effectively supports and assists with the development of less experienced researchers Alert to needs of others	Managing and developing leadership Actively developing local staff and colleagues Invests in others Care of team	Managing and leading Systematically managing and nurturing others Developing the discipline – nationally (perhaps internationally). Invests in organisation. Care of colleagues	Developing policy, international
Learns with help of feedback, advice, guidance, direction	Welcomes feedback, advice, guidance, direction	Actively seeks feedback advice, guidance, direction on self and team	Actively seeks feedback advice, guidance, direction on team/department and institution	

Appendix 6: Validation interview questions

Those questions relevant to participants focusing on a particular domain are given in standard type and those peculiar to those responding about the total framework are in bold.

General relevance

i.e. Does the general title of the domain encompass a range of characteristics you would expect in the description of a researcher? Would you recognise it as appropriate? Have we divided the characteristics into appropriate sub-domains? Does the heading convey what is in the sub-domain? Is the content of the descriptors what you would expect?

Overall, is the level of detail sufficient? If it is too much (or too little) would that cause a problem?

Does the RDF encompass all of the characteristics you would expect in the description of a researcher? Do they seem appropriate to the role? Have we divided the characteristics into appropriate domains and sub-domains?

Overall do the sub-domains with their descriptors fit together?

Overall, is the level of detail sufficient? If it is too much (or too little) would that cause a problem?

Structure

i.e. Is the structure of the sub-domain appropriate? **Is the sub domain structure across the framework appropriate?** Are the phases recognisable? Do the descriptors across the phases progress sensibly?

Consistency and balance

i.e. Do the descriptors seem balanced within each sub-domain and across the domain/s overall? Is the content of descriptors balanced across the phases?

Language

Have we used appropriate vocabulary? Does it reflect the professional realm of research? Are there any terms that need explaining?

Progression

i.e. Do the descriptors develop appropriately across the phases of a research career?

Inclusion and exclusion

i.e. Are there any important descriptors that we have omitted? Are there any that you feel are inappropriate? If so, why?

Personal relevance

Do you recognise yourself in this section of the framework? Would you be comfortable describing yourself in these terms?

Appendix 7: Select bibliography

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Vitae

Vitae is supported by Research Councils UK,(RCUK), managed by CRAC: The Career Development Organisation and delivered in partnership with regional Hub host universities.

Vitae works with UK higher education institutions (HEIs) to embed professional and career development in the research environment. Vitae plays a major role in innovating, sharing practice and enhancing the capability of the higher education sector to provide professional development and training for researchers.

Our vision is for the UK to be world-class in supporting the personal, professional and career development of researchers.

Our aims:

- build human capital by influencing the development and implementation of effective policy relating to researcher development

- enhance higher education provision to train and develop researchers

- empower researchers to make an impact in their careers

- evidence the impact of professional and career development support for researchers.

For further information about the range of Vitae activities go to www.vitae.ac.uk or contact website@vitae.ac.uk

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