

## Chapter 2

### **Current approaches to transferable skills training for researchers**

*Institutions appear to be the main actors in terms of strategies and programmes for formal transferable skills training for researchers. Most training activity is recent and has a variety of goals, with communication and interpersonal skills the most frequent targets. Most programmes have not yet been evaluated and there are few planned changes to current approaches. Workplace-based training appears relatively limited but likely to increase. The data do not allow for robust cross-country comparisons, but countries appear to differ in terms of the level of government involvement and the direction and novelty of their policies.*

## 2.1. Introduction

This chapter presents the results of the OECD policy questionnaire on transferable skills training for researchers. Respondents provided details about government- and institution-level strategies, programmes, and plans for introducing formal transferable skills training for researchers. Information was also gathered on transferable skills training for Master's-level students and workplace-based approaches to training. The information on training was compiled to help inform discussions on future government policy directions by providing new information on this key input to researchers' transferable skills. Given the nature of the exercise, the information gives examples of training activity but does not constitute a statistical sample (Box 2.1). However, for illustrative purposes, occasional reference is made to shares or percentages derived from analysis of questionnaire responses.

Responses came from 17 countries: Australia, Belgium, Canada, Denmark, Estonia, Finland, Germany, Italy, Japan, Korea, Luxembourg, Norway, New Zealand, Poland, Slovenia, Turkey and the United Kingdom. A total of 75 responses were received: 12 from national-level governments (of which one pertained to an individual government ministry), 10 from regional/state-level governments, 36 from universities (at various administrative levels), 12 from research institutions, and 5 from other organisations involved in researcher training activities (see Annex A for the full list). Summary information was provided separately by delegates from Austria, Canada, France, the Netherlands, Turkey, the United Kingdom and the United States, as well as the European Commission.

### **Box 2.1. Interpreting information from the policy questionnaire**

The information gathered from responses to the policy questionnaire on transferable skills training for researchers is best seen as examples of training approaches taken by different organisations in different countries. The sample size and attributes, as well as response rates, differed among countries, so that responses cannot be analysed as a statistically robust sample. In addition, the responses do not necessarily present a full coverage of training activity in the responding organisations. For example, some training activity at faculty level in universities may not be covered in an institution-wide response. Also, for the different training activities (for researchers, for Master's-level students and in the workplace) respondents were asked to describe a maximum of three programmes. This raises selection issues for respondents with more than three programmes in a given area. Finally, respondents interpreted the questions in different ways. Some discussed specific training courses while others discussed programmes under which several courses are offered. Also, some institutions classified similar activities in different ways (e.g. delivery of a government-level programme was sometimes described in the "own programme" part of the questionnaire).

The chapter focuses first on formal training for researchers and then looks at other training activities (Master’s-level training and workplace experience). More detailed information on government- and institution-level strategies and programmes can be found in Annex B. The final section offers some remarks on overall patterns in transferable skills training for researchers.

## 2.2. Overview of government responses – training for researchers

National-level government responses were received from Australia, Denmark, Estonia, Finland, Japan, Korea, Luxembourg, Norway, New Zealand, Poland, Slovenia and Turkey.<sup>1</sup> Regional/state-level government responses were received from Flanders (Belgium), and nine German *Länder* – Bavaria, Rhineland Palatinate, Berlin, the Free State of Thuringia, Hamburg, Bremen, Sachsen-Anhalt, Brandenburg and Baden-Wurtemberg. Summary information on Austria, Canada, France, the Netherlands, Turkey, the United Kingdom and the United States is discussed in Box 2.2, and Box 2.4 summarises information provided by the European Commission.

### 2.2.1. Strategy/agenda

Eight government responses (seven national, one regional) described some sort of overarching strategy or agenda for formal transferable skills training for researchers. The strategies do not generally centre explicitly on transferable skills, but are about broader researcher development. Most often, the goals include enhancing the employability of researchers in academia and improving research work. Three governments mentioned preparing researchers for a wider labour market. Other goals mentioned were improving teaching and supervising skills, improving research management, improving commercialisation skills, and attracting talent.

Of the strategies most directly addressing transferable skills, Estonia has an action plan on entrepreneurship studies. It aims to widen the availability of business education and, notably, will update curricula in the science and engineering fields. Turkey’s Ministry of Health (School of Public Health) aims to build the capacity of human resources for health and to support training, research and other activities to support policy making.

Australia, Bavaria (Germany), Korea and Poland described broader strategies relating to science and technology (S&T) workers and researchers. Australia’s Research Workforce Strategy envisages a research workforce with the skills to support innovation, educate the next generation and drive productivity improvements across the economy; it defines priority areas requiring action to achieve this vision, including in the research training system. Bavaria’s Elite Network gives multi-faceted support to talented

students and young scientists at Bavarian universities. Korea's 2<sup>nd</sup> National Comprehensive Plan on Nurturing and Supporting National Talents in the field of Science and Technology aims to increase Korea's competitiveness by supporting creative Korean S&T workers. Poland's EU-funded Human Capital Operational Programme (HC OP) includes some objectives that bear on transferable skills for research and development (R&D) staff, in particular research management and commercialisation skills.

Since 2003 Japan's Committee for Human Resources in Science and Technology (of the Council for Science and Technology) has released several recommendations that implicitly and explicitly set directions for enhancing transferable skills training in doctoral and postdoctoral settings. Its Central Education Council also expressed a need for such training in its 2005 and 2011 reports on graduate school education. Denmark's Ministerial Order on PhD Programmes at Universities (a regulatory document) contains some guidance on transferable skills for PhD students, but is not a strategy or agenda as such. Estonia's PhD regulations stipulate proficiency requirements in certain skills and therefore implicitly give some guidance for training.

Five national and nine regional government responses indicated no relevant strategies or agendas. In explaining this, a number of the German *Länder* noted that transferable skills training is the direct responsibility of higher education establishments, with governments playing a role as principal funders of public higher education institutions. Summary information from Austria, Canada, France, the Netherlands, Turkey, the United Kingdom and the United States also suggests that explicit (federal) government transferable skills strategies or agendas are relatively uncommon (Box 2.2); however, general human resource-related strategies may have implications for transferable skills, and other entities provide opportunities for training.

### **Box 2.2. Various government approaches to transferable skills training for researchers**

Responses to the policy questionnaire revealed that for a number of governments, transferable skills training is not a government responsibility but the responsibility of other sectors or entities. To see whether this was true of a wider set of countries, brief summary information was requested about government-level approaches to transferable skills training for researchers. Several responses were received, and additional information about specific programmes is contained in Annex B.

**Austria** has no specific federal government strategy on transferable skills for researchers. However, some stakeholders offer programmes that provide transferable skills, such as the Austrian Science Fund's structured doctoral programmes (*Doktoratskollegs*) and Life Science Austria's (LISA) activities to encourage entrepreneurship (e.g. seminars on team building, leadership and legal issues). Promotion of collaboration between science and business has also given rise to opportunities for acquiring transferable skills, and a broad spectrum of researchers gain skills and experience while working in temporary institutions that bring universities and other research institutions together with industry partners.

**Canada** has no specific federal government transferable skills strategy or agenda. However, programmes managed by its research councils and similar entities provide elements of transferable skills training, often through workplace experience. The Research Council of Canada, the Natural Sciences and Engineering Research Council of Canada, and the Networks of Centres of Excellence of Canada all offer programmes that give researchers practical industry experience.

**France** has no specific government transferable skills strategy. However, the doctoral training framework supports researchers' acquisition of transferable skills, through formal training and workplace experience. In addition, initiatives under the government's "Investments for the Future" programme may offer researchers opportunities to gain transferable skills through actions to bring universities, research institutions and other actors together.

The **Netherlands** noted that its universities are responsible for transferable skills.

**Turkey** views developing S&T human resources as a pillar of Turkish science, technology and innovation (STI) policy. The government's National Science, Technology and Innovation Strategy 2011-16 has several axes relevant to transferable skills, and the Science and Technology Human Resources Strategy and Action Plan 2011-16 makes "improving research environment, researchers' skills and experience" a strategic objective. This includes efforts to promote research methodology and R&D project management courses, training for soft skills such as leadership, and interdisciplinary work and collaboration. Recent decrees relating to the innovation and entrepreneurship system adopted by the Supreme Council for Science and Technology (SCST) also have implications for transferable skills training for researchers. In addition, the Scientific and Technological Research Council of Turkey (TUBITAK) has a wide range of funding programmes for developing researchers' careers, skills and experience. .../...

### **Box 2.2. Various government approaches to transferable skills training for researchers (*continued*)**

The **United Kingdom** does not have a specific government transferable skills strategy or policy for researchers. Government funding for teaching and research is allocated by funding bodies and research councils with their own governance structures and funding allocation mechanisms. These bodies' strategies can include transferable skills for researchers (*e.g.* Research Councils United Kingdom states that it will ensure its funding develops the right balance of specialist research expertise and wider business and management skills for high-technology employers as well as academia). A number of overarching documents/agreements bear on transferable skills training for researchers, such as the Concordat to Support the Career Development of Researchers, the Researcher Development Framework and Statement, the QAA (Quality Assurance Agency) Code of Practice for assurance of academic quality and standards in postgraduate research degrees, and the Roberts recommendations for postgraduate researchers and research staff. A variety of initiatives exist at the institutional level, ranging from short courses to industrial doctorate centres.

The **United States** has no specific federal government transferable skills strategy or agenda. However, the United States Office of Science and Technology Policy (OSTP) is responsible for providing leadership for interagency efforts to develop and implement sound S&T policies and budgets and to work with other stakeholders (*e.g.* state governments, the private sector) in doing so. Part of this leadership involves workforce development at all levels, including transferable skills for researchers. Programmes developing transferable skills for researchers are managed by individual federal agencies or departments, and policies are programme-specific. Examples include programmes managed by the National Science Foundation (an independent federal agency), the United States Air Force Office of Scientific Research, the United States Department of Energy and the United States National Institutes of Health. These entities provide programmes for researchers and Master's-level students, as well as programmes offering workplace experience via internships, summer schools, etc., to undergraduate and graduate students.

#### **2.2.2. Programmes**

Seven national governments and one regional government described formal training programmes for developing researchers' transferable skills. They also described strategies/agendas, although the programmes were not necessarily explicitly linked to the strategies. They detailed 11 training programmes or courses. In addition, Japan noted that its Global COE (centres of excellence) programme includes transferable skills development as part of various activities, Poland mentioned a suite of programmes under the umbrella of its HC OP, and Korea highlighted a programme that delivers a range of training courses via a dedicated training establishment – Korea Institute of R&DB Human Resources Development (KIRD).

With one exception, programmes were not introduced before 2005. Their stated rationales are generally broad – supporting research personnel and research management – although more specific rationales were also noted (e.g. Australia’s Commercialisation Training Scheme [CTS] attempts to equip researchers with skills to bring ideas to market and Korea’s Degree and Research Centre programme tries to bridge universities and research centres). Some programmes are targeted at just one group of researchers (e.g. Turkey’s three programmes aim only at research personnel), but most target two if not three of the groups of interest (PhD candidates, post-docs, other early stage researchers and research personnel). Communication skills were most often noted as a target of the training programmes, followed by interpersonal skills. Nevertheless, differences among categories were minor and programmes seem generally to provide training in an extensive range of transferable skills.

The length of training varies widely, from a day to 24 months (part-time in the latter case), is most often voluntary, and is provided in various ways (e.g. lectures, workshops, residential stays, distance education). Training for PhD students is most often stand-alone; only Korea’s Degree and Research Centre programme mentioned training as part of regular courses. The number of researchers participating each year varies widely; for instance, 20-30 personnel take part in the Turkish School of Public Health’s personnel development training each year, while 2 500 individuals participate in Estonia’s PRIMUS. Training is predominantly provided by universities and funded by the government (although Estonia’s programme is funded by the EU, while Turkey’s programmes receive some World Bank funding).

### **2.2.3. Programme evaluation**

The vast majority of government programmes for transferable skills training have not (yet) been evaluated, making it difficult to link training to actual output (*i.e.* researchers’ skills) and outcomes (e.g. research results, mobility, etc.). Australia’s CTS was evaluated in late 2010; government support for commercialisation training for higher degree by research (HDR) students was considered appropriate and aligned with the government’s strategic priorities; several recommendations were made for future training approaches. In 2010 Japan’s Council for Science and Technology undertook a mid-term evaluation of the Young Researchers Training Program for Promoting Innovation<sup>2</sup> and found that activities performed jointly with a company had been important. Feedback from participants in the Bavarian government’s soft skills courses, offered under the Elite Network strategy, suggested that communication (including negotiation, intercultural competencies, dealing with difficult situations, etc.) is the topic of most interest to participants, followed by self-development (e.g. leadership, self-management) and presentation (e.g. presentation skills, argumentation, voice training). Estonia plans to evaluate its PRIMUS programme in 2013.



### ***2.2.4. Allocation of research funding***

Government responses indicated that research funding does not usually attach conditions relating to transferable skills training for researchers. However, Denmark remarked that its PhD funding to higher education establishments requires transferable skills training (Ministerial Order), and a forthcoming Flemish scheme will also link doctoral funding to transferable skills training.

### ***2.2.5. Plans for change***

Three governments (Flemish, Rhineland Palatinate and Turkey) noted plans to introduce new programmes/activities or to improve human resource plans, while Japan noted that their Committee for Human Resources in Science and Technology is considering enhancing training in transferable skills and career development for postdoctoral researchers. Under its Research Workforce Strategy, the Australian government is consulting universities and other key stakeholders on the establishment of research training standards that would take into account the training of students for broader employability (Box 2.3). It is also considering the implications of including the development of additional generic and innovation skills under key scholarship programmes for research degrees. However, most countries planned no specific changes to their current arrangements for transferable skills training for researchers.

#### **Box 2.3. Influencing skills via quality standards in Australia**

In reviewing its Research Training Scheme (RTS), the Australian government launched a consultation process to obtain feedback on what quality in research training means and how it can be measured and encouraged. The RTS is the government's largest source of funding for Australian higher education providers to support research training for domestic students undertaking research doctorate or research Master's degrees. It is paid as a block grant to universities according to a performance index based on student completions, research income and research publications, where these variables are proxies for the quality of training supervision and research.

Among the questions posed, two are particularly relevant to the current study:

- Should government do more to enable research training in multidisciplinary environments? What barriers are there and how might they be overcome?
- Should Australian higher degrees by research include broader skills training? If so, should this be through compulsory coursework or through some other mechanism?

Behind these questions is a sense that requirements for new knowledge are increasingly driven by challenges demanding multidisciplinary solutions, such that researchers need the ability to broaden their own understanding, engage with researchers in other fields, understand a variety of viewpoints and collaborate. There is also a view that students need skills for a wide range of employment contexts and in order to meet the requirements of modern academic careers.

*Source:* Department of Innovation, Industry, Science and Research (2011).



### 2.2.6. *Wider research career development agenda*

A few governments noted that their transferable skills training strategies and programmes were consistent with other human resource-related action plans or higher education strategies.

### 2.2.7. *International co-operation*

In response to the question of whether governments co-operate internationally in their research career development activities, a number of government respondents referred to co-operation at the European level. This co-operation centres on several strategy and policy documents and on some joint initiatives; the most commonly mentioned are described in Box 2.4, which also summarises information on the Marie Curie Actions provided by the European Commission. Links at the Nordic level were also mentioned, and several governments noted the importance of researcher mobility internationally.

#### **Box 2.4. Common avenues for co-operation and transferable skills training at the European level**

**European partnership for researchers:** Created in 2008, the partnership proposes joint actions to be implemented by member states to improve the attractiveness of research careers in Europe. Actions are in four areas: open recruitment and portability of grants; social security and supplementary pensions for mobile researchers; attractive employment and working conditions; and improving training, skills and experience. With regard to the last of these, member states are encouraged to develop and support national skills agendas to ensure that researchers are equipped with skills throughout their careers and to ensure better links between academia and industry, *e.g.* industry placements during training (EC, 2008).

**Innovation Union:** The Europe 2020 Flagship Initiative: Innovation Union, launched in 2010, sets out a strategic approach to economic development *via* innovation in the EU. Key parts of the strategy involve raising skills levels and enabling researchers to work and co-operate across the EU (EC, 2010).

**EURAXESS:** This joint initiative of the European Commission and member states is a one-stop shop for researchers which provides information on job vacancies, funding opportunities and fellowships in Europe, as well as details of the European Charter and Code of Conduct. It also offers a network of service centres to help internationally mobile researchers and a network for European researchers working outside Europe. The main portal is at <http://ec.europa.eu/euraxess/index.cfm/general/index>.

The **Marie Curie Actions** of the People Programme support transferable skills training in areas such as intercultural skills, project management skills, leadership, communication, information technology (IT) skills, presentation skills, entrepreneurial skills and language skills. .../...

**Box 2.4. Common avenues for co-operation and transferable skills training at the European level (*continued*)**

Among the eight current Marie Curie Actions, the Marie Curie Initial Training Network (ITN), in particular, addresses the training of PhD candidates and other early-stage researchers. It aims to improve their career perspectives in both academic and non-academic sectors, thereby making research careers more attractive to young people. The ITN has three modes of implementation:

1. ITNs are typically set up as Multi-Partner ITNs, with at least three participants established in at least three member states or associated countries.
2. Introduced in 2012, European Industrial Doctorates (EID) aim to train highly skilled researchers and stimulate entrepreneurship, creativity and innovation in Europe by involving businesses in doctoral training so that skills better match public- and private-sector needs. Each EID is composed of one academic institution and one participant from the private sector.
3. Innovative Doctoral Programmes (IDP), also introduced in 2012, are composed of a sole participant established in a member state or associated country. Participants are typically universities or research institutions offering innovative doctoral programmes with international, interdisciplinary and intersectoral training.

In the next framework programme for research, the proposed Marie Skłodowska-Curie Actions will encourage new, innovative and creative types of training. The actions will become the main EU programme providing structured doctoral education and training. Further information is at <http://ec.europa.eu/research/mariecurieactions/>.

## 2.3. Overview of institutional responses – training for researchers

Among the responses received from institutions regarding their transferable skills training activities 36 were from universities in Belgium (Flanders), Denmark, Estonia, Germany, Japan, New Zealand, Norway, Poland and the United Kingdom. Most described approaches at the university level (respondents were often from graduate/doctoral schools), but one described the approach of a group of universities; and six responses were from faculties or departments. There were 12 responses from research institutions in Finland, Germany, Italy, New Zealand and Norway, and five were from other organisations involved in researcher training activities in Canada, Korea, Luxembourg, Poland and the United Kingdom.

### 2.3.1. Role in government programmes<sup>3</sup>

Few universities indicated a specific role in delivering government programmes for transferable skills training for researchers. In Estonia, Tallinn University and the University of Tartu have some responsibility for training under the PRIMUS programme, which is mainly financed by the

European Social Fund. Japan's three responding universities carry out training under programmes designed by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) and the Japan Science and Technology Agency (JST) (e.g. the Young Researchers Training Program for Promoting Innovation at the Tokyo Institute of Technology). Scotland's University of Strathclyde is a partner university, host and manager of events for the Scottish Crucible leadership and development programme. Three universities and one department indicated responsibilities for PhD and other general university studies and/or meeting standards under the Bologna process.

Three research institutions indicated that they deliver government programmes for transferable skills training for researchers. In each case, this includes doctoral training and hosting students; one also included sabbaticals (inward and outward) in this category. Scion (New Zealand) noted positive synergy between itself and universities in hosting work placements, as Scion's research projects are well aligned with specific postgraduate studies. The Finnish Meteorological Institute also noted training on air quality measurement in this category, but this does not appear to be closely related to transferable skills.

The five other organisations involved in transferable skills training each indicated a role in delivering government programmes. The Ontario Centres of Excellence (OCE) delivers the Industry-Academic Collaborative Program on behalf of the Ontario Ministry of Research and Innovation and acts as the programme development and delivery agent for training programmes. Korea's KIRD is a training and educational institution belonging to, directed and funded by the Korean government's Ministry of Education, Science and Technology. It is based on the government's second "National Comprehensive Long-term Plan on Nurturing and Supporting National Talent". KIRD is the sole institution providing transferable skills training programmes for researchers in the public sector and in government-funded institutions, and for Master's and PhD-level students and professors in universities that participate in national R&D programmes in science and technology. Luxembourg's Fonds National de la Recherche (FNR) has two funding instruments that relate to training and plays a role in programme management and impact evaluation. Poland's Foundation for Polish Science helps deliver the EU-funded SKILLS programme on behalf of the Ministry of Science and Higher Education and the Ministry of Regional Development. The United Kingdom's Vitae is itself an initiative of Research Councils United Kingdom and indirectly of the Department for Business, Innovation and Skills, and plays an important role in strategy development, delivery and evaluation.

### 2.3.2. *Strategy/agenda*

Among responding universities 23 indicated an overarching strategy or agenda for transferable skills training for researchers. More than half had broader plans related to university and human resource development, and in nine cases, their strategies related directly to doctoral or graduate schools. One university indicated that their strategy was under development, and five universities had no strategy. The departmental/faculty responses did not indicate strategies. When dates of introduction of strategies were noted, they were mainly 2008 or later. Universities offered various rationales for their strategies. Most frequently these involved preparing people for a wide range of careers and ensuring that their skills were useful, followed by a desire to provide a good research environment. Several universities mentioned professionalising training and making it more systematic. In answer to the multi-choice question about goals for the strategy/agenda, most ticked enhancing employability of researchers in academia, preparing researchers for a wider labour market and improving research work. In the additional responses, improving the quality of teaching and supporting internationalisation were commonly mentioned.

Nine research institutions mentioned strategies or agendas for transferable skills training for researchers. For some, this meant a broad approach to researcher development (*e.g.* the Helmholtz Association's Talent Management strategy), while others had a more targeted approach (*e.g.* Plant and Food Research New Zealand's Leadership Development agenda). Many of the strategies are very new (one is being introduced in 2012). The rationales included maintaining the expertise and commitment of staff, improving the qualifications of researchers for varied careers, stimulating internal communication and creativity, supporting organisational success by developing effective leaders, retaining and attracting talent, and improving the quality of work. In answer to the multi-choice question about goals for the strategy/agenda, they frequently ticked improving research. The many additional responses included supporting commercialisation and international co-operation, raising competitiveness and organisational performance, and improving external relationships.

Three of the five other organisations have a strategy or agenda for transferable skills training. The OCE has an OCE Talent Strategy (introduced in 2005), KIRD has its Long-term Development Strategy for 2020 (introduced in 2008), and Vitae pointed to certain recommendations regarding PhDs and post-docs in a 2002 report, "SET for Success – the supply of people with science, technology, engineering and mathematics skills". Luxembourg's FNR is currently developing its strategy. Two organisations mentioned that their rationale for introducing their strategies was to meet government requirements, whereas the OCE is trying to address knowledge gaps identified by

industry and Vitae aims to augment the supply of highly skilled researchers for research and the United Kingdom economy. Strategies' goals include enhancing employability of researchers in academia, preparing researchers for a wider labour market and improving research work, but a number of additional responses named encouraging knowledge transfer and commerce, building an entrepreneurial culture, improving the environment for research for local and foreign researchers, increasing public understanding of research and contributing to policy making.

### **2.3.3. Programmes**

#### *University responses*

All of the universities and five of the six university departments responding to the questionnaire offer formal transferable skills training programmes for researchers. More than 70 examples were provided.<sup>4</sup> Some described specific courses (*e.g.* a Job Seeking Workshop at the Norwegian University of Life Sciences), while others described broader programmes with a variety of training opportunities (*e.g.* the Doctoral Training Programme at Ghent University). Like strategies, most have been introduced since the mid-2000s, although there are some longer-standing examples, such as the Scientific Continuing Education Programme at Technische Universität Berlin (since 1996) and the Pedagogical Development Programme at the Norwegian University of Science and Technology (NTNU) (since 1994).

The rationales for the university programmes range from broad to very specific. The most frequent theme is preparing students and researchers for a range of careers by building a variety of skills, followed by improving teaching and supervisory skills. Other rationales include supporting young researchers, restructuring training to uphold quality standards, meeting student demand for courses, improving management and research leadership skills, and improving writing and publishing skills. The overwhelming majority of programmes are voluntary. However, some graduate schools require participation, and some pedagogical training programmes are compulsory for those without formal qualifications. About 40% of the programmes target PhD candidates. The rest address various combinations: all researchers, solely research personnel, or PhD candidates and post-docs. For programmes for research personnel, few respondents indicated a focus on particular career levels; however, some noted staff new to teaching and supervision, or new to leadership roles. A quarter of the programmes address all types of transferable skills and the rest target various combinations. In the latter group, communication skills were most frequently mentioned, followed by interpersonal skills. Enterprise skills were least frequently mentioned.

The length of university programmes varies widely. Around a quarter of those described run for several days (essentially, a short training course); they cover teaching and supervision skills, writing and publishing, project management and intellectual property rights (IPRs). A fifth of programmes offer modules over several months to a year; they tend to focus on mentoring, coaching and leadership, and pedagogy. The next most frequent type of programme involved training through the degree programme (usually, a doctorate) with a variety of short courses. Other options were programmes of several hours or several weeks, and certificate programmes of one to three years, with lectures and seminars, workshops, group work, practical experience, individual coaching and exchanges. In doctoral/graduate school programmes, up to 100 different training options may be offered each year, and individual courses may be offered up to ten times a year. Most programmes appear to be stand-alone, in that the training is conducted in a dedicated course.<sup>5</sup> The number of people attending programmes each year ranges widely, with the largest numbers associated with doctoral school programmes. Programmes are most often delivered by university staff, sometimes from dedicated career development centres, but external specialists are also involved. Programmes are most often funded by universities themselves, with government- or EU-level funding and industry funding mentioned for a small number. Participants' fees were mentioned only for three programmes.

### *Research institution responses*

Six of the responding research institutions provide programmes for transferable skills training for researchers. A total of 13 examples were given, all introduced since 2005. Many of the programmes are aimed at management and leadership, but language training, academic writing and transferable skills for PhD students were also mentioned. The programmes are a mix of short courses (e.g. a one-day workshop on teams) to programmes over several months or several years (e.g. the Helmholtz Management Academy offers training over a year and a half). Compared to university programmes, these programmes generally take place fewer times a year and have fewer participants. However, this is likely consistent with these organisations' workforce size and the type of training provided. Around half of the programmes are aimed at all researchers in the organisations (from PhD candidates to experienced research personnel), but half have particular target groups, notably research personnel and people in positions of leadership. One programme was also available to administrative staff. Interpersonal and communication skills are the most common topics, followed by organisational skills. External consultants and specialists frequently deliver programmes in addition to own staff, and funding is overwhelmingly internal. Participation is compulsory in only a few cases (for some management/leadership training).

### *“Other organisation” responses*

These organisations all have programmes for transferable skills training for researchers. Eleven examples were discussed, of which ten were introduced since 2006, but one dates to 1968 (the GRADschool programme in the United Kingdom). The content of eight of the programmes is relatively specific (e.g. the FNR’s workshop on communication with the media); the other three are broader programmes comprising a number of training opportunities (e.g. the OCE Value-Added Personnel programme). The rationales for the programmes are in line with the overall strategies; some additional specific rationales included improving the success rate of applicants to Luxembourg- and EU-level funding calls, strengthening R&D staff potential in science administration and management, and raising researchers’ awareness of their skills and how best to present them. Communication skills and research competencies were most frequently mentioned as topics, followed by organisational skills.

The length of training (which is generally voluntary) ranges from a half-day to two weeks, and is delivered in various ways, such as workshops, group discussions and lectures. Vitae highlighted the use of “experiential learning” and noted that several programmes are residential. Some of the programmes have large numbers of participants: KIRD’s R&D competency programme has around 1 000 participants a year, and Vitae’s GRADschool programme accommodates up to 2 000 researchers a year. Just under half of the programmes are open to all researchers (PhD candidates to experienced research personnel). Training programmes of the Foundation for Polish Science are open to PhD candidates, post-docs and other early-stage researchers who have been laureates and scholars of other Foundation programmes. KIRD and Vitae deliver some or all of their training programmes themselves; other organisations use specialised agencies and external experts. KIRD was the only organisation to mention a tranche of funding from training participants.

#### **2.3.4. Programme evaluation**

Many university training programmes for researchers are evaluated by participants at the end of training, but few have been evaluated for their impact. This makes it difficult to link training inputs to actual outputs and outcomes. Some respondents noted that evaluations had been positive, and that changes had occurred as a result of feedback, but provided little information. NTNU mentioned that its Equal Opportunities Mentor Programme has enhanced cross-disciplinary understanding and interaction, owing to the way mentors are matched to partners, and the University of Oslo stated its Research Leadership Programme has been adopted by other



universities and is now also taught in English. The University of Strathclyde’s Researcher Development Programme is evaluated annually based on the Rugby Team Impact Framework (Box 2.5).

Research institutions indicated that their researcher training programmes were evaluated by participants and evolved according to feedback.

“Other” organisations indicated evaluation by participants in training programmes. Vitae also mentioned an external evaluation of its “How to be an effective researcher” programme in 2010, which was positive but pointed to possible changes, and a follow-up study of the impact on participants of its 2009 “Leadership in Action” programme, which was also positive.

### **Box 2.5. Rugby Team Impact Framework**

The Rugby Team (now the Impact and Evaluation Group) was established in 2005 in the United Kingdom. Its purpose is to “propose a meaningful and workable way of evaluating the effectiveness of skills development in early career researchers”. A particular challenge is to understand what has occurred as a result of (rather than coincidentally with) recent training initiatives.

The Rugby Team Impact Framework attempts to evaluate impacts of investment in researcher training and development at several levels:

- Impact level 0: Foundations –inputs and throughputs (*e.g.* number of training opportunities offered and number of researchers participating).
- Impact level 1: Reaction – participants’ reaction to training (*e.g.* their view of the training experience).
- Impact level 2: Learning – the extent to which participants change attitudes, improve knowledge or increase skills as a result of the training.
- Impact level 3: Behaviour – changes in behaviour that have occurred owing to participation in training.
- Impact level 4: Outcomes – an attempt to measure the final results of training (*e.g.* has the quality of research improved?).

*Source:* Rugby Team (2008).

### **2.3.5. Allocation of research funding**

Few universities mentioned conditions attached to funding which required recipients to ensure provision of transferable skills training. Some German universities highlighted PhD programme rules or conditions of funding from the *Deutsche Forschungsgemeinschaft* (DFG – German Research Foundation), and a Belgian university noted that requests for funding needed to be in line with its doctoral school strategy. Only one research institution indicated funding conditions related to requirements of doctoral programmes. None of the other organisations involved in

transferable skills training activities noted funding conditions. However, the OCE mentioned that this had been considered and discarded, while the FNR noted that in future transferable skills training may be made a part of FNR funding to Luxembourg institutions.

### ***2.3.6. Plans for change***

Among universities, more than half indicated no changes to the current approach to transferable skills training for researchers or did not answer the question. Five noted that improvements would be made to training arrangements, and a further five wished to make training more systematic (and perhaps compulsory). In Norway, the adoption in 2012 of the Norwegian national qualifications framework (based on the Bologna Framework<sup>6</sup>) may require revisions to universities' training approaches, as it will influence both course content and pedagogy.

Responding research institutions had few plans for change. Two had plans for expansion and improvement, and one noted the challenge of financing training (although management remains convinced that training will help cope with a changing market). One highlighted the introduction of a Human Resource (HR) Action Plan in 2012 to accompany its HR Strategic Roadmap.

Other organisations involved in training described various changes. The OCE mentioned a recent streamlining of its activities to focus on entrepreneurship but foresaw no further changes. KIRD plans to develop longer courses, and the Foundation for Polish Science wishes to use its own funds to continue the programmes of the SKILLS package. At a more comprehensive level, Luxembourg's FNR plans to analyse training needs at the national level, identify gaps and construct an agenda. Vitae would like to achieve a cultural shift, with a holistic approach to professional development of researchers and integration of training into PhD programmes and the normal business of doing research.

### ***2.3.7. Wider research career agenda***

Most universities did not answer the question about the relation between their formal transferable skills training for researchers and their wider research career development agenda (if one existed). Six indicated their activities were in line with university-wide strategies or complemented other educational opportunities for students. Some considered that the training helped prepare researchers for non-academic careers.

Half of the research institutions responded to the question on career development agendas. Several noted that transferable skills are crucial for career advancement and that training complements other learning opportunities such as mentoring. The Istituto Superiore Mario Boella in Italy noted that its researchers are encouraged to investigate ways to help the institute evolve and improve its researchers' careers; its HR Action Plan will play a role.

Among other organisations, the OCE noted that its transferable skills training complemented its core activity of industry-academia collaboration, and the Foundation for Polish Science pointed to complementarities between training and programmes in the EU Innovative Economy Operational Programme for Poland. Vitae's training fits with its vision of the United Kingdom as a leader in the career development of researchers.

### ***2.3.8. International co-operation***

Almost half of responding universities either did not cover international co-operation in their research career development activities or did not respond to the question. Several universities mentioned European-level links, and two New Zealand universities noted programme links with Australia. NTNU has an internationalisation strategy which emphasises collaboration and mobility; some universities in Estonia and Poland also mentioned mobility.

More than half of the research institutions mentioned international co-operation related to researcher development. Hosting researchers and exchange of staff were mentioned by several, and the role of international projects in providing career development activities was also noted.

The three Europe-based other organisations indicated co-operation at the European level (*e.g.* the ESF or involvement of foreign institutes in training). Vitae also interacted with the United States. KIRD wishes to develop strong global networks and co-operation with other countries in transferable skills and career development activities.

## **2.4. Overview of responses – other training activity**

The questionnaire also sought information from governments and institutions on transferable skills training for Master's-level students and on the development of researchers' transferable skills through workplace experience. While these were not the focus of the project, some countries indicated in the project design phase that, for them, this was where most transferable skills policy operated.

### *2.4.1. Training for Master's-level students*

#### *Government responses*

Four government respondents had a strategy for transferable skills training for Master's-level students. In Bavaria, Estonia and Poland, the strategies were those described above for researchers (the Elite Network, the Entrepreneurship Studies Action Plan, and the HC OP, respectively). Additionally, Norway described its strategy for entrepreneurship skills aimed at students from compulsory school to higher education, targeting skills related to communication, innovation and ethics. At the programme level, Bavaria mentioned its Max Weber programme for building interpersonal, organisational and communication skills and improving cognitive abilities, and its soft skills seminars under the Elite Graduate programme. Together, these voluntary programmes train around 600 students a year. Poland noted that its HC OP funds projects that provide training to Master's students; similarly, Australia's Commercialisation Training Scheme is open to Master's degree students, and Korea's Degree and Research Centre programme also supports these students. Looking ahead, the Flemish government is considering funding in this area; no other governments foresaw changes.

#### *University responses*

More than half of university responses had no strategy for formal transferable skills training for Master's students.<sup>7</sup> A few noted that their strategy was part of a wider university strategy, and one Japanese university noted that Master's-level training was usually organised along with PhD-level training. Two New Zealand universities implemented strategies at faculty level and drew on Graduate Profiles.

Consistent with this pattern, more than half of university responses had no specific programmes for Master's-level training. Twelve institutions (in Estonia, Germany, Japan, New Zealand, Norway and Poland) had programmes, and twenty-five examples were discussed. Some were short training courses (e.g. a two-day Entrepreneurship Camp at the Norwegian University of Life Sciences), but a number appeared to be degree/certificate programmes (e.g. Communication Management at Tallinn University, the Master of Bioscience Enterprise at the University of Auckland, and the European Business Competence Licence at the Wroclaw University of Economics). Philipps-Universität in Marburg, Germany, described a group of 60 Master's programmes. Four programmes targeted all transferable skills although two did not have a strong focus on enterprise skills. The other programmes targeted a mix of skills, most often including communication and interpersonal skills. Research competencies and

enterprise skills were the least frequently mentioned, although the NTNU's Entrepreneurship Venture Cup only targeted enterprise skills.

Around a third of university responses indicated changes for Master's-level training in transferable skills. The Heinrich-Heine-Universität in Düsseldorf plans to combine existing programmes under a central organisation, and the University of Strathclyde's approach may evolve with a reorganisation of the infrastructure of its researcher development programme. Several Norwegian universities noted that the forthcoming national qualifications framework might lead to a change in approach, and the University of Auckland highlighted plans to develop a skills programme similar to that for its PhD candidates.

### *Research institution responses*

Nine of the twelve responding research institutions have no strategy for Master's-level training in transferable skills. Two Norwegian institutions host Master's students and another encourages its Master's-qualified staff to upskill. One Finnish institution provides some training in Master's programmes. No institution envisaged any changes. However, the two that host Master's students commented that this can be an important start for a research career, and that Master's students often advance as candidates for PhD work on projects in the institution. Nofima (Norway) noted that Master's students were an important source of recruitment.

### *“Other organisation” responses*

The strategies of OCE and KIRD related to transferable skills training for researchers also included Master's-level students. The OCE Value-Added Personnel Program offers training to around 50 students a year, on interpersonal, cognitive, communication and enterprise skills. Student evaluations have been positive. KIRD offers lectures and practice in writing academic papers in English, research experimental planning methods and research data analysis to up to 300 students a year in each programme. The programmes target research competencies, and participants fund 30% of the costs. KIRD may introduce e-learning courses. The Foundation for Polish Science is considering funding some Master's-level training.

### ***2.4.2. Workplace experience programmes***

#### *Government responses*

Three government respondents indicated an overarching strategy for the development of researchers' transferable skills through workplace experience: Estonia (the Operational Programme for Human Resource Development, funded by the European Social Fund), Slovenia (Research and Innovation Strategy), and the Free State of Thuringia (Germany) (Research Strategy). The goal of each is to prepare researchers for a wider labour market. Estonia and the Free State of Thuringia also aim to enhance employability of researchers in academia and improve research (as well as commercialisation and international co-operation in the case of Thuringia).

Seven governments (Australia, Belgium (Flanders), Denmark, Estonia, Norway, Slovenia and the Free State of Thuringia) described ten programmes that provide for workplace experience for researchers; some of Korea's other training programmes also include workplace experience. All but two programmes have been introduced since 2006. Some common aims are to produce researchers with knowledge of industry and to support knowledge transfer and interaction between the academic and industry sectors. Programmes typically provide training over two to four years but sometimes less, depending on the research project. Numbers of participants vary; the largest numbers are in Australia's Cooperative Research Centre (CRC) programme; in 2009-10 universities awarded over 300 higher degrees to students studying under the programme. Five of the programmes aim specifically at PhD candidates and could be regarded as "industrial PhDs". Australia's CRC programme essentially provides an industrial PhD-type experience (as well as training for other researcher levels) as part of a broader goal to support collaboration on research driven by end users, and Slovenia's "Programme for Strengthening R&D Personnel in Companies" provides for industrial PhDs, engagement of new or guest researchers, and establishment of new topic-oriented research groups. Enterprise and interpersonal skills are key targets. Four programmes split the funding responsibility between government and industry, while the others are funded solely by governments (with European-level contributions in two instances).

Denmark's industrial PhD programme has been evaluated and suggests positive effects for both researchers and companies. For example, wages for industrial PhDs are 7-10% higher than those of regular PhDs, and companies that host industrial PhD students have more patenting activity and higher growth of gross profits. An evaluation of the Australian CRC programme suggested the need for more analysis of researcher training in the centres and noted some concerns about student satisfaction with the experience and the skills learned. The Free State of Thuringia planned to evaluate its Agenda Proexcellence at the end of 2011.

Workplace-based approaches to transferable skills acquisition were also a notable feature in the separate government-level information provided (Box 2.2). France indicated that the vast majority of PhD graduates involved in the CIFRE programme (essentially, an industrial PhD scheme) find employment within six months of graduation. The ease with which researchers change companies may indicate their high employability and the extent to which their experience is appreciated.<sup>8</sup>

### *University responses*

The vast majority of university responses indicated no strategy to support the development of researchers' transferable skills through workplace experience.<sup>9</sup> Nevertheless, it is part of some universities' wider strategy: the Midterm Plan of Japan's Nagoya University, the Strategic Plan of New Zealand's Auckland University of Technology and the NTNU's strategy (in a section on innovation and creativity). At Belgium's Universiteit Hasselt workplace training is part of its doctoral school approach, while at Germany's Heinrich-Heine-Universität Düsseldorf and New Zealand's University of Canterbury it is a faculty/college-level choice. Some of the rationales mentioned included understanding firms and preparing students for career choices, helping students transition to the real world, upholding a commitment to be a knowledge partner to the public and private sectors, and meeting PhD regulations.

Eight universities mentioned a total of 13 programmes or examples; three involved participation in the government's industrial PhD schemes and one referred to the internships included in Master's-level education programmes. Six examples of internships were given; the Tokyo Institute of Technology's Value Creating Internship gives three months or more of full-time experience in firms. The Auckland University of Technology has positions for graduate assistants (to give students employment and career development) and short-term post-doctoral fellows (to help establish research careers and identify future staff).

However, while the level of formal training related to workplace experience is low, there may be other opportunities for developing relevant skills. NTNU noted that, in terms of numbers, many more researchers are engaged in research activity with external partners (essentially, getting experience and building skills) than in formal training programmes for transferable skills. It also mentioned the option for researchers to take a part-time (20%) position outside the university in addition to their university post (Box 2.6). At NTNU this is quite common among research staff in engineering who may have external engagements in industry, research institutes or university start-ups.



### Box 2.6. Adjunct professors in Norway

In Norway, academic and research staff in higher education institutions and research institutes can take a part-time (20%) position with another employer in addition to their main full-time post. Similarly, higher education institutions and research institutes are permitted to employ external staff in part-time (20%) positions. These positions are used by institutions to strengthen co-operation in research and teaching and promote knowledge transfer. The main occupation of these “adjunct professors” and “adjunct associate professors” may be outside academia (e.g. in hospitals or industry) or in another higher education institution or research institute, in Norway or abroad. For individuals, this scheme may contribute to the development of transferable skills, especially when the engagement is cross-sector.

There is little information available about evaluations of workplace experience programmes. An evaluation of Nagoya University’s research internship programme found that students, supervisors and business appreciated this activity; it enhanced students’ ability to solve problems and helped them learn about leadership. Some ten universities (from six countries) noted possible changes, with several considering the introduction of a programme. One university intends to expand structured PhD and Master’s programmes and to include workplace experience on a more regular basis, another is planning a university-wide approach and a third is developing an internship programme. One Norwegian university is working on an internal qualification framework based on the forthcoming national version; it will spur course revisions and address transferable skills training, including that gained via workplace experience.

#### *Research institution responses*

Three research institutions have a strategy or agenda related to transferable skills acquisition through workplace experience, and a further four have implicit support for the activity. The Finnish Meteorological Institute encourages mobility (arguing that this brings fresh views and new networks), as does Norway’s Centre for Rural Research. Norway’s Northern Research Institute Narvik wants researchers to be familiar with industry and have relevant experience; this is seen as an important part of their career development. The Helmholtz Association and the Finnish Institute of Occupational Health host PhD students, thereby providing valuable workplace experience, while Norway’s Nofima hosts industrial PhD students and supports “foreign exchanges” (financing researchers to visit research institutions abroad). New Zealand’s Scion seeks to strengthen technology foresight, translation and commercialisation capabilities and has a sabbatical programme that both sends out and hosts researchers. This is seen as a mechanism to strengthen engagement, improve research design and accelerate uptake of technology.

Nofima indicated it would welcome additional industrial PhD students if financing is available. The Finnish Institute of Occupational Health is working on a national co-operative structure for research and education in work-related rehabilitation.

### *“Other organisation” responses*

KIRD indicated that its long-term development strategy encompassed training through workplace experience, while Vitae is developing a plan in this regard. At programme level, the OCE offers two programmes – one facilitating one-year industry internships for post-docs, other early stage researchers and post-secondary graduate students, the other linking young entrepreneurs (either PhD candidates, post-docs or other early stage researchers) with industry. These programmes aim to support Ontario’s competitiveness by helping firms access skilled people and fast-track new ventures and industry-academic collaboration. The OCE hopes to expand funding for their programmes and will attempt to align with industry hiring timelines. KIRD offers three one- or two-day training courses with strong workplace relevance: R&D project management; intellectual property management; and research commercialisation. The latter two courses target enterprise skills and require part-funding by participants. KIRD wishes to develop additional courses.

Luxembourg’s FNR’s *Aides à la Formation – Recherche* (AFR) is a funding scheme for PhD and post-docs involving public-private partnerships. It seeks to promote knowledge transfer between sectors, motivate the private sector to participate in PhD training and develop a research culture in Luxembourg. The funding requires recipients (PhD candidates and post-docs) to spend a minimum of 10% of their research time in the company over their period of study. FNR also oversees state aid for temporary secondment of highly qualified people, which supports experience of up to three years (the hosting organisation and the government share salary costs).

## **2.5. Overall patterns**

The questionnaire responses suggest that institutions are the main actors in terms of strategies and programmes for transferable skills training for researchers, with the role of government secondary to that of universities, research institutions and other organisations. Around a third of responding governments have a strategy, compared to almost two-thirds of universities, three-quarters of research institutions and three-fifths of other organisations. Around a third of responding governments provide programmes for training, compared to practically all responding universities, half of research

institutions and all of the other organisations. The summary information separately received from RIHR delegates from seven countries reinforces this picture; most indicate that government is not the key player in transferable skills training for researchers.

Most initiatives are fairly recent and often little evaluation has been carried out, beyond end-of-course evaluations by participants, making it difficult to draw links between training inputs and training outputs and outcomes. Strategies across all groups tend to be broad (not specific to transferable skills) and recently introduced. As well as enhancing the employability of researchers in academia, preparing researchers for a wider labour market, and improving research, the groups identified a number of additional strategic goals, which sometimes overlapped (*e.g.* teaching quality, commercialisation and knowledge transfer, international co-operation, and a quality research environment). Communication and interpersonal skills are frequent targets of the predominantly voluntary training. Many programmes were for all researchers; however, universities had a significant number of programmes specifically for PhD candidates and research institutions often had programmes for research personnel (particularly in leadership roles). The vast majority of programmes for transferable skills training have not (yet) been evaluated at programme level. This makes it difficult to comment on their impact, *e.g.* the change in skill levels due to the programmes, the subsequent effects on researchers and their research activities, the wider effects on desired goals, any unintended consequences, changes in behaviour, etc.

Changes are infrequently envisaged, aside from ongoing improvements to courses and some expansion of programmes. However, a few respondents indicated they wished to take a more systematic approach to training and to embed training more thoroughly in existing education and research structures; one respondent hoped for a “culture change” with respect to transferable skills training. Research institutions and other organisations were the most engaged in international co-operation for training. All groups noted the importance of researcher mobility and the role of international and collaborative research projects in building valuable skills. Funding conditional on transferable skills training was infrequently mentioned; when it was, it was often related to funding for doctoral studies.

Activity at the Master’s level is much more limited. Few governments, universities, research institutions or other organisations have explicit strategies or programmes; those that exist are often part of broader activities for researcher training. Nevertheless, some respondents noted the importance of Master’s students as an inflow to the researcher population and a third of universities were planning changes, including addressing the system and infrastructure for providing this type of training to Master’s students.

Training through workplace experience also appeared more limited, but the activity looks set to increase in the future. So far, research institutions appear to offer (relatively) the most opportunities for this type of training. Industrial PhDs, internships and exchanges are the most common approach, and governments noted their importance for building industry knowledge and supporting knowledge transfer. Almost a third of universities plan to expand workplace experience programmes or to make this a more systematic part of their educational approach. The information received separately from Austria, Canada, France, the United Kingdom and the United States included several examples of policies for acquiring transferable skills through workplace experience. Taken together, workplace experience seems to be regarded as an important tool for building transferable skills as well as deepening research capabilities, supporting organisational goals and contributing to industrial goals. The limited evaluation material available also points to positive outcomes from such activities.

Unfortunately, it is not possible to compare transferable skills training by country. Only 13 countries submitted information related to both governments' and other institutions' transferable skills training; even for these the questionnaire results give only a sample of activity and numerous gaps remain. Various reasons were discussed in Box 2.1. Essentially, not all relevant institutions were included, and for those that did respond, not all activity is captured. Importantly, some main actors in the transferable skills training arena may not have participated; in Norway, for instance, the Research Council of Norway and the Norwegian Association of Higher Education Institutions are involved in different types of training, but were not targeted in the study. More generally, employers outside of universities and public research institutions were not in the sample of respondents.<sup>10</sup>

With the caveat on country comparisons in mind, the information submitted shows some dimensions along which countries appear to differ; however, explaining these differences requires more country-specific contextual information. In some countries, emphasis on transferable skills is relatively new (*e.g.* Luxembourg), while in others organised activity in this area has taken place for some time (*e.g.* United Kingdom). The level of government involvement and direction is relatively high in some countries (*e.g.* Korea) but not in others (*e.g.* Germany). Understanding why this is so requires interpretation of questionnaire responses in the context of individual countries' particular institutional arrangements, industrial structures, etc. For instance, Luxembourg has a relatively young research environment – its university was established in 2003 and doctoral schools are only now being set up. At the institutional level, too, the approach depends on the context; for example, a technical university may be more

concerned with academic skills than with transferable skills because its co-operation with industry may be considered to provide sufficient learning opportunities for the latter group of skills.

Overall, then, the questionnaire responses reveal a significant amount of transferable skills training activity, undertaken predominantly by individual institutions, for the most part without any overall national strategy or direction from governments or other entities. Chapter 3 explores the potential policy implications of these insights, drawing on discussions among delegates and experts at a project workshop.

## Notes

- <sup>1</sup> The Turkish response specifically concerns the Ministry of Health (School of Public Health).
- <sup>2</sup> This programme was renamed “Promotion of Internship Program for Postdoctoral Fellows” in 2011.
- <sup>3</sup> This section draws on answers to the question “Does your organisation have a role in delivering any national, state or regional government programmes for formal transferable skills training for researchers?” The aim was to identify programmes for which the initiative and design came from government while the organisation’s role was implementation. However, some responses referred to programmes that appeared to be the choice of the organisation rather than the result of specific government policies (*e.g.* sabbatical opportunities for research institution staff) or the result of particular obligations (*e.g.* hosting PhD students in research institutions). Also, respondents’ judgement of whether a programme was governmental appeared to differ. Some universities included doctoral training as a government programme, while others with such training identified it as an organisational strategy or programme. The summary here follows the categorisation given by respondents and also notes where programmes could also be considered in other categories (*e.g.* sabbaticals as workplace experience).
- <sup>4</sup> The collective response for the Russell Group universities did not provide as many programme details as direct responses to the questionnaire. Thus, calculations of shares or percentages of university programmes in this sub-section’s discussion are based solely on questionnaire responses (*i.e.* 65 examples).
- <sup>5</sup> This draws on responses to the question “Where the programme is for doctoral candidates, how is it structured?” The question aimed to understand whether transferable skills training was embedded in regular courses (*e.g.* communication skills training for political science PhD students through student presentations of work during their weekly tutorials) or delivered in a dedicated course (*e.g.* communication skills training in a two-day workshop). However, some responses appeared to contradict other information given about the programmes. The results for this question are mentioned here but are tentative.

- <sup>6</sup> [www.ond.vlaanderen.be/hogeronderwijs/bologna/qf/documents/Bologna\\_Framework\\_and\\_Certification\\_revised\\_29\\_02\\_08.pdf](http://www.ond.vlaanderen.be/hogeronderwijs/bologna/qf/documents/Bologna_Framework_and_Certification_revised_29_02_08.pdf).
- <sup>7</sup> Master's-level strategies and programmes were not specified in the Russell Group university response.
- <sup>8</sup> See [www.anrt.asso.fr/fr/pdf/plaquette\\_cifre\\_complete\\_avril2009\\_GB.pdf](http://www.anrt.asso.fr/fr/pdf/plaquette_cifre_complete_avril2009_GB.pdf).
- <sup>9</sup> Workplace experience was not discussed explicitly in the Russell Group university response.
- <sup>10</sup> The questionnaire was distributed by RIHR delegates.



## *References*

- Department of Innovation, Industry, Science and Research (2011), *Defining Quality for Research Training in Australia: A Consultation Paper*, October, Canberra.
- EC (European Commission) (2008), “Better Careers and More Mobility: A European Partnership for Researchers”, Communication from the Commission to the Council and the European Parliament, COM(2008)317 final, 23 May, Brussels.
- EC (2010), “Europe 2020 Flagship Initiative: Innovation Union”, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, COM(2010)546 final, 6 October, Brussels.
- European Science Foundation (2009), *Research Careers in Europe: Landscape and Horizons*, A report by the ESF Member Organisation Forum on Research Careers, ESF, Strasbourg.
- Rugby Team (2008), *The Rugby Team Impact Framework*, Careers Research and Advisory Centre (CRAC), September.



**From:**  
**Transferable Skills Training for Researchers**  
Supporting Career Development and Research

**Access the complete publication at:**  
<https://doi.org/10.1787/9789264179721-en>

**Please cite this chapter as:**

OECD (2012), “Current approaches to transferable skills training for researchers”, in *Transferable Skills Training for Researchers: Supporting Career Development and Research*, OECD Publishing, Paris.

DOI: <https://doi.org/10.1787/9789264179721-5-en>

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